Douglas PARTNERS

GROUNDED EXPERTISE

Report on Groundwater Modelling of Potential Development Impacts

Proposed Manufactured Housing Estate

40-80 and 82 Chapmans Road, Tuncurry

Prepared for Allam MHE Developments No. 2 Pty Ltd

Project 219536.00

15 January 2025

Douglas Partners Pty Ltd
ABN 75 053 980 117
douglaspartners.com.au
15 Callistemon Close, Warabrook, NSW 2304
(02) 4960 9600

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

Signature		Date
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FS604853

Douglas Partners acknowledges Australia's First Peoples as the Traditional Owners of the Land and Sea on which we operate. We pay our respects to Elders past and present and to all Aboriginal and Torres Strait Islander peoples across the many communities in which we live, visit and work. We recognise and respect their ongoing cultural and spiritual connection to Country.

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Report on Groundwater Modelling of Potential Development Impacts
Proposed Manufactured Housing Estate
40-80 and 82 Chapmans Road, Tuncurry

1. Introduction

This report presents the results of groundwater modelling of potential development impacts undertaken for the proposed manufactured housing estate at 40-80 and 82 Chapmans Road, Tuncurry. The investigation was commissioned by Allam MHE Developments No. 2 Pty Ltd (Allam) on 26 November 2024and was undertaken in line with Douglas Partners Pty Ltd (Douglas) proposal 2195396.00.P.005.Rev0 dated 26 November 2024. The site is shown on Drawing 1, Appendix A.

It is understood that the proposed development comprises a manufactured housing estate which will be constructed on imported fill. There has been no specific request for information (RFI) from Mid Coast Council (MCC) regarding groundwater for the proposed development at this stage, however, previous submissions between Allam and MCC have resulted in RFI from MCC. The purpose of this report is to provide information to MCC in anticipation of MCC comments/RFI.

This report should be read in conjunction with all appendices including the notes provided in Appendix B.

2. Scope of Work

The scope of work comprised following:

- Brief review of available existing data comprising geological maps, topographic data, registered groundwater bores and salinity mapping;
- Summary of subsurface conditions from previous investigations by Douglas;
- Preparation of a conceptual hydrogeological model (CHM);
- Groundwater modelling of the site under two scenarios (pre-development and post development) using MODFLOW; and
- Preparation of this report including results of groundwater modelling, estimated groundwater impacts and recommendations for future work.

For the purposes of this report the following documents were provided:

- ADW Johnson (ADWJ) Detail and Contour Survey - 190835-DET-001-A, revision A;
- Concept Engineer Plans – ADWJ - 190835-CENG- revision A dated 09/12/2024;
- Master Plan – ADWJ – 190835-MP- revision K dated 09/12/2024;
- Catchment Plans – ADWJ – 190835-WCMP – revision A dated 29/11/2024;
- Regional Geotechnical Solutions Pty Ltd (RGS) Detailed Site Investigation (RGS, 2022); and

- Regional Geotechnical Solutions Pty Ltd (RGS) Addendum to Detailed Site Investigation – Contamination Assessment (RGS, 2023).

3. Proposed Development

Reference to provided Master Plan (ADWJ – 190835-MP- revision K dated 09/12/2024) design surface provided by ADWJ and recent discussions with ADWJ, it is understood that the proposed development comprises the following (see Figure 1):

- Construction of engineered fill platform up to about 3.5 m above current surface (design RL 2 to RL 5 m AHD) across majority of the site, sand or other MCC approved fill material;
- Construction of 283 manufactured homes, community centre and internal roads on the fill platform;
- Construction of access road to off Chapmans Road; and
- Stormwater infrastructure (see below for detail).

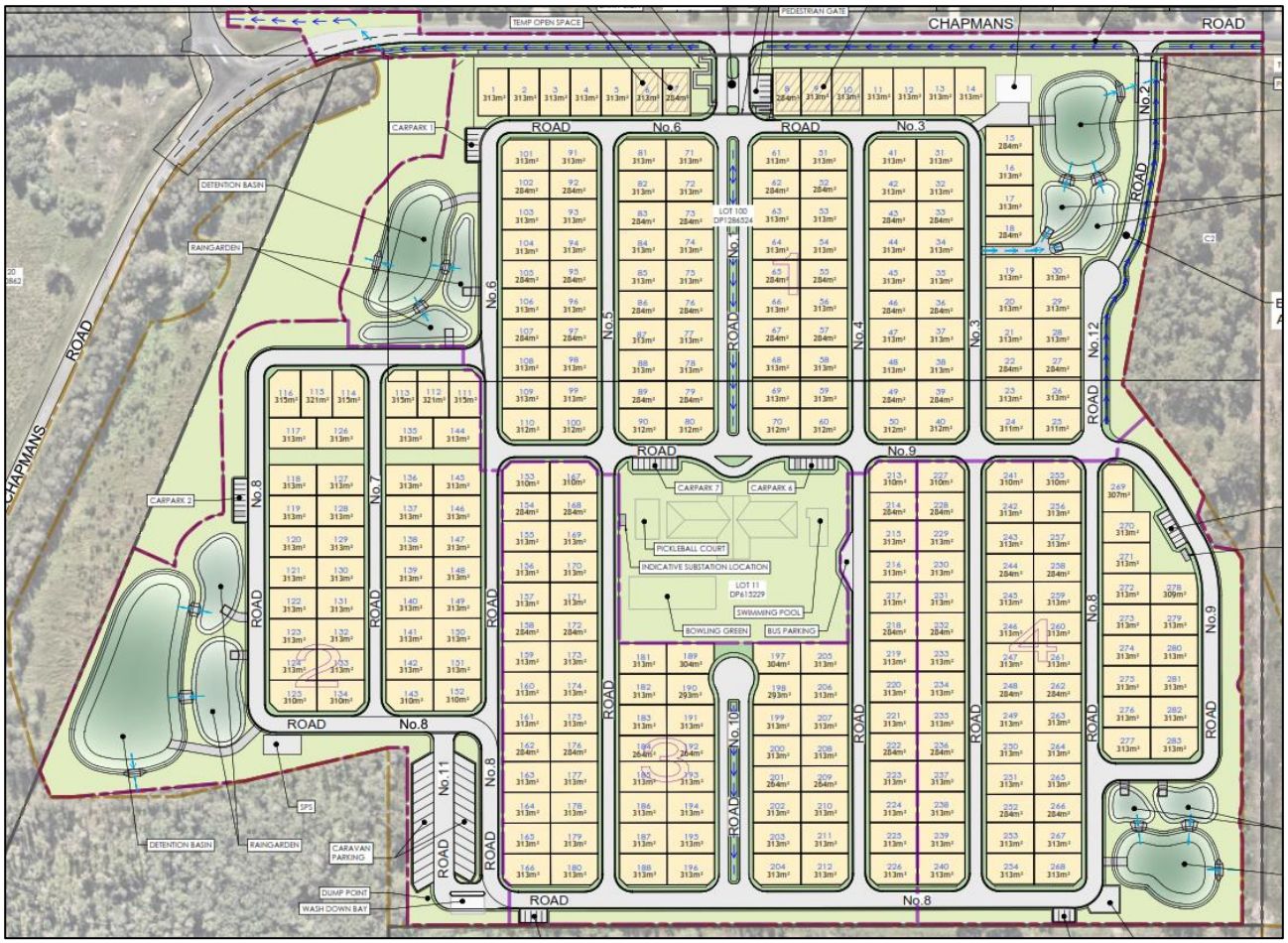

Figure 1: Proposed development (Master Plan – ADWJ – 190835-MP- revision K dated 09/12/2024)

Reference to Stormwater Plans (ADWJ drawing 190835-CENG-401 to 414 revision A) on site stormwater is managed in six catchments ('Catchment 1' to 'Catchment 6'). Stormwater from Catchment 1 to Catchment 4 is managed on site with stormwater from each catchment managed with two raingardens and one detention basin whereas Catchment 5 and Catchment 6 drain to existing stormwater infrastructure along Chapmans Road. In a storm event which overflows the detention basins

- Catchment 1 drains to Chapmans Road;
- Catchment 2 drains to a C2 zoned piece of land in the south-west corner of the site;
- Catchment 3 drains to a C2 zoned piece of land in the north-east corner of the site; and
- Catchment 4 drains to a C2 zoned piece of land in the south-east corner of the site.

Figure 2: Proposed stormwater catchments ADWJ drawing 190835-CENG-401 revision A dated 09/12/2024

Reference to Stormwater Plans and recent discussions with ADWJ the proposed stormwater management for each catchment (except Catchment 5 and 6) is as follows:

- Stormwater collected from the catchment via pit and pipe.
- Stormwater enters a 'splitter pit' and is split between two raingardens ('A' and 'B'). The raingardens are un-lined and infiltrate run-off through filter media into the underlying subsurface. The raingardens have been designed handle less than 3 month annual return interval (ARI) storm events.

- In the event of a >3 month ARI storm event, the stormwater is designed to overflow from the raingardens via a 3 m wide spillway into a single detention basin which is un-lined and infiltrates run-off through filter media (same as raingardens).
- In an emergency, stormwater can overflow the detention basin via a 5m wide spillway and level spreader.

Therefore, under average rainfall conditions, it would be expected that the rain gardens accept all site stormwater and the detention basins are not utilised.

Pertinent details obtained from the stormwater plans are summarised in Table 1 below.

Table 1: Raingarden and detention basin details (ADWJ drawing 190835-S2-WCMP-001 to 009 Rev A dated 29/11/2024)

Catchment	Catchment area (Ha)	Raingarden		Detention basin	
		Base RL	Total base area (m^2)*	Base RL	Approx base area (m^2)**
1	4.4	2.4	697	2.0	769
2	6.3	2.3	1411	1.9	2286
3	2.0	3.1	490	2.7	640
4	2.63	3.1	665	2.7	740

Notes to table:
* Sum of Raingarden A and Raingarden B
** Base area scaled off Stormwater Plans and therefore approximate only.
RL Reduced level (m AHD)

4. Site Description

Site identification information is presented in Table 2, with site shown in aerial (Figure 3) and drone photo (Figure 4) below.

Table 2: Site Identification

Item	Details
Allotment Identification	Lot 100 DP 1286524 and Lot 11 DP 615229
Street Address	40-80 Chapmans Road and 82 Chapmans Road
Locality	Tuncurry, NSW
Site Area (approximately)	22.5 ha
Local Government Area	Mid Coast Council (MCC)
Current Zoning	R2 – Low density residential E2 – Environmental conservation
Current Land use	Vacant

Figure 3: The 'site', approximate site boundary shown in red (base map from Sixmaps)

Figure 4: The 'site' shown in red (photo provided by ADW Johnson dated 19 November 2024)

At the time of most recent field work (5 November 2024) the lot was undeveloped with a fill platform approximately 1 m thick in the central portion of the site (see Figure 4 above). 'End-dump' stockpiles of soils and stockpiles of materials (pallets, concrete pits, brick, sheet metal, wood) are in the central portion of the site, on top of the fill platform.

Additionally, there was a stockpile of sand in the eastern portion of the site (see Figure 4 above) which was observed by Douglas to be imported during December 2023 field work. Site personnel at the time indicated this sand material was sourced from dredging of Coolongolook River nearby Forster Tuncurry Bridge.

The eastern and western portions of the site did not appear to be filled and were undeveloped with stockpiles of mulch, probably from recent removal and subsequent mulching of mature vegetation such as trees. Vegetation across the site comprised mainly 'slashed' grass and some denser bushes typically on soil stockpiles.

5. Published Data

5.1 Topography

Detailed survey of the site was only available for the north eastern area of the site. Reference to detailed survey by ADW (project 190835-DET-001-A, copy provided in Appendix A) indicates the site levels as of July 2022 are as follows:

- Western and eastern portion of the site – in the order of RL 0.5 (m AHD) to RL 1.5; and
- Central portion of the site – in the order of RL 1.5 to RL 4.5.

Reference to NSW Spatial Services 1 m Digital Elevation Model (DEM) for Bulahdelah and Forster dated 2012 indicates the following:

- The site has an elevated area in the north east (see above detailed survey), generally the remainder of the site is at around RL 2.5 in the eastern area of the site sloping down to the west to a minimum of around RL 0.5; and
- Regional topography to be in the order of RL 0 at Wallamba River to the west of the site, grading to RL 7 to the east of the site, with an overall slope dipping to the west/south west.

5.2 Geology

Reference to NSW Seamless Geology map indicates the following (see Figure 5):

- Quaternary aged coastal deposits (QH_br in Figure 5), which typically comprises sand, shell and gravel – eastern area of the site;
- Quaternary aged estuarine tidal-delta flat (QH_et in Figure 5), which typically comprises sand, silt, clay shell and gravel – central area of the site; and
- Quaternary aged clastic sediments (QH_af), which typically comprise silt, sand and clay – on some western parts of the site.

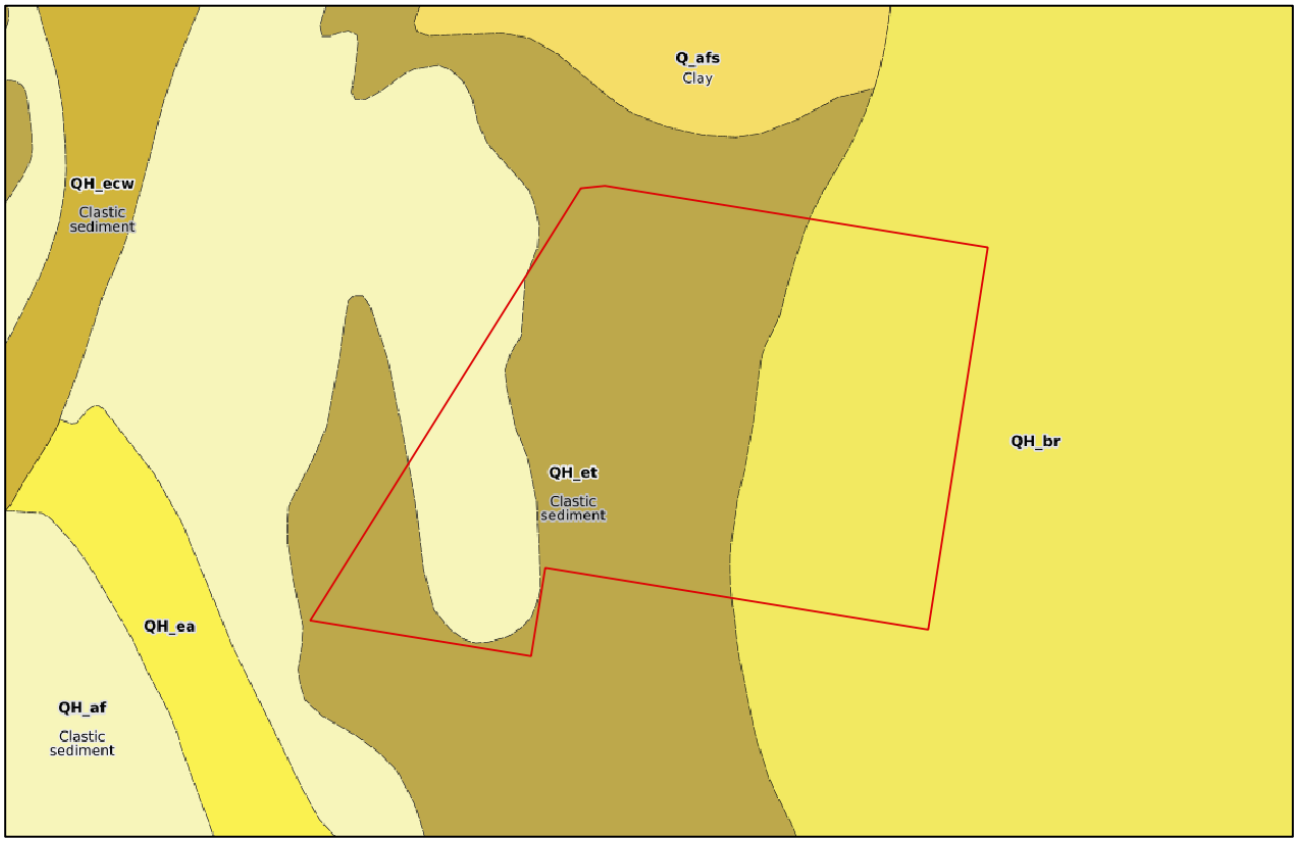

Figure 5: Geology mapping, site shown in red

5.3 Registered groundwater bores

An on-line records search of groundwater wells registered with the NSW Office of Water indicated the absence of registered wells on the site (see Figure 6).

Figure 6: NSW registered groundwater bores, site boundary shown in red outline.

Numerous registered wells were within 500 m of the site, details are summarised below in Table 3.

Table 3: Registered groundwater monitoring wells (within 1km of the site)

Bore ID	Easting, northing	Bore depth (m bgl)	Depth to GW (m bgl)	Subsurface logged (m bgl)	Purpose	Distance from site (m)
GW200229	451773, 6441839	9.0	2.7	Sand (0-9.0)	Recreational	400 m south-east
GW080297	451877, 6442028	9.0	2.7	Sand (0-9.0)	Not available	450 m east
GW201112	451123, 6442650	7.0	2.0	Not available	Irrigation	480 m north
GW047063	451593, 6442629	8.0	-	Soil humus (0-0.3) Sandstone (0.3-8.0)	Mining	550 m north
GW047062	451619, 6442691	8.0	-	Soil humus (0-0.3) Sandstone (0.3-8.0)	Mining	600 m north
GW078865	451443, 6441089	3.0	1.2	Gravel/sand (0-3.0)	Monitoring	650 m south
GW202224	451984, 6441465	7.0	-	Topsoil/sand (0-7.0)	Domestic	700 m south east
GW078867	452095, 6441769	7.5	2.73	Sand (0-7.5)	Monitoring	750 m east
GW78858	451915, 6440968	22.0	-	Sand (0-21.0) Clay (21.0-22.0)	Monitoring	950 m south east

Notes to table:
m bgl metres below ground level
GW Groundwater

The registered bores within the vicinity of the site generally indicate a sandy subsurface profile with groundwater observed during drilling at depths between 1.2 m and 2.73 m. It should be noted that groundwater levels are affected by factors such as climatic conditions and soil permeability and therefore vary with time.

Additionally, clay was recorded on the drilling log for GW78858 at a depth of 21 m.

5.4 Surface water

The surface water features in the vicinity of the site as follows:

- Table drain along Chapmans Road, directly north and west of the site;
- Unnamed channel, approximately 25 m south of the site;
- Lake at the racecourse, approximately 150 m north of the site; and

- Wallamba River, approximately 475 m west of the site.

The local surface flow direction is likely to be to the west (toward Wallamba River).

5.5 Salinity

With reference to NSW Department of Planning and Environment eSPADE mapping indicates a data node approximately 25 m north-west of the site has "salting evident". This suggests potentially high salinity conditions in soils within the vicinity of the site.

5.6 Acid sulfate soils

Reference to NSW Acid Sulfate Soil Risk map indicates that there is a high probability of acid sulfate soil occurrence within 1 m of the ground level at the site (see Figure 7).

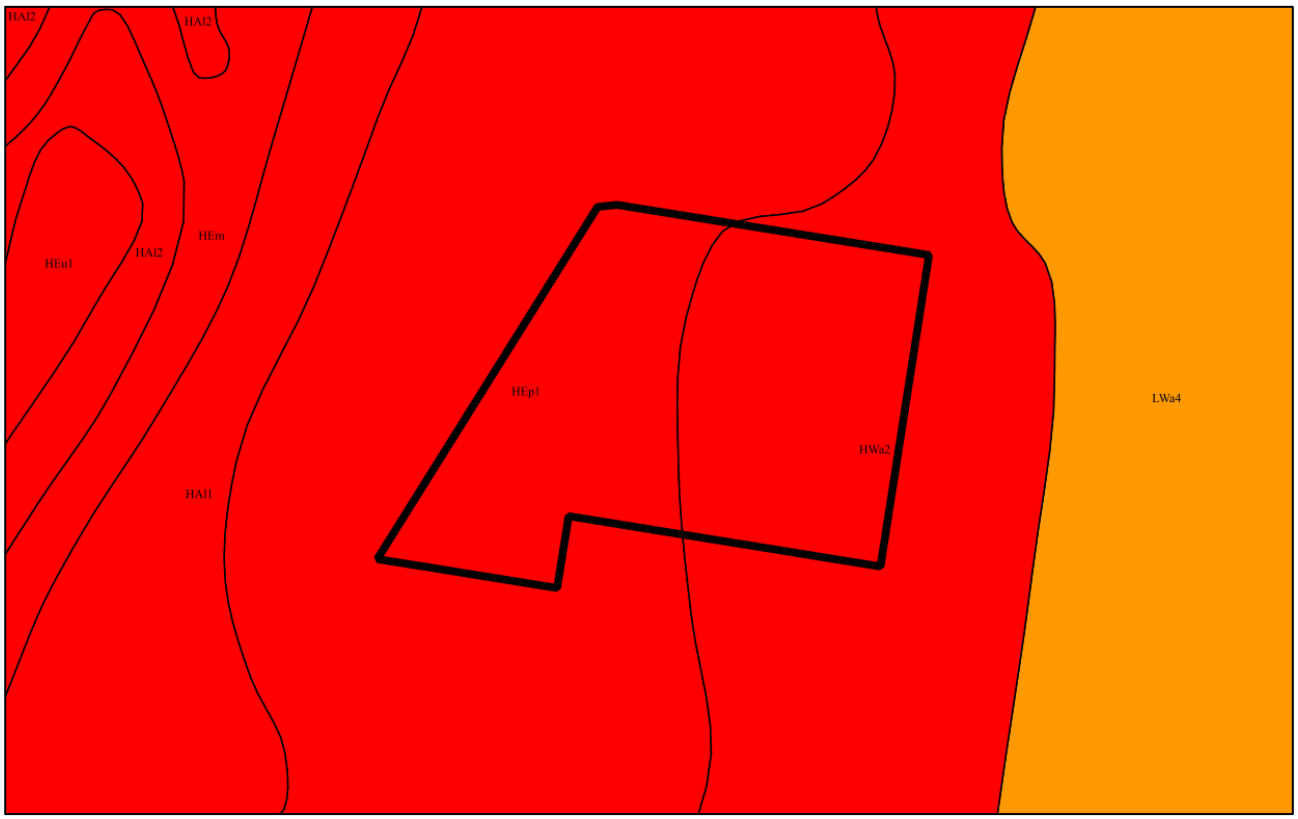

Figure 7: High probability of ASS (in red), low probability of ASS (in orange), site boundary shown in black outline

5.7 Groundwater dependant ecosystems (GDEs)

A review of the Bureau of Meteorology (BOM) Groundwater Dependant Ecosystems Atlas indicates the following:

- On site:
    - The south western, north eastern and south eastern areas of the site are mapped as low to high potential for terrestrial GDE (swamp paperbark, swamp mahogany, swamp oak, saw sedge, baumea juncea grasses, banksia) (see red and orange areas on Figure 8);

- Off site:
  - Various areas in the vicinity of the site are mapped as low to high potential for terrestrial GDE (swamp paperbark, swamp mahogany, swamp oak, saw sedge, baumea juncea grasses, banksia) (see red and orange areas on Figure 8);
  - Wallamba River (approximately 300 m west of the site) as high potential for aquatic GDE (see blue area on Figure 8).

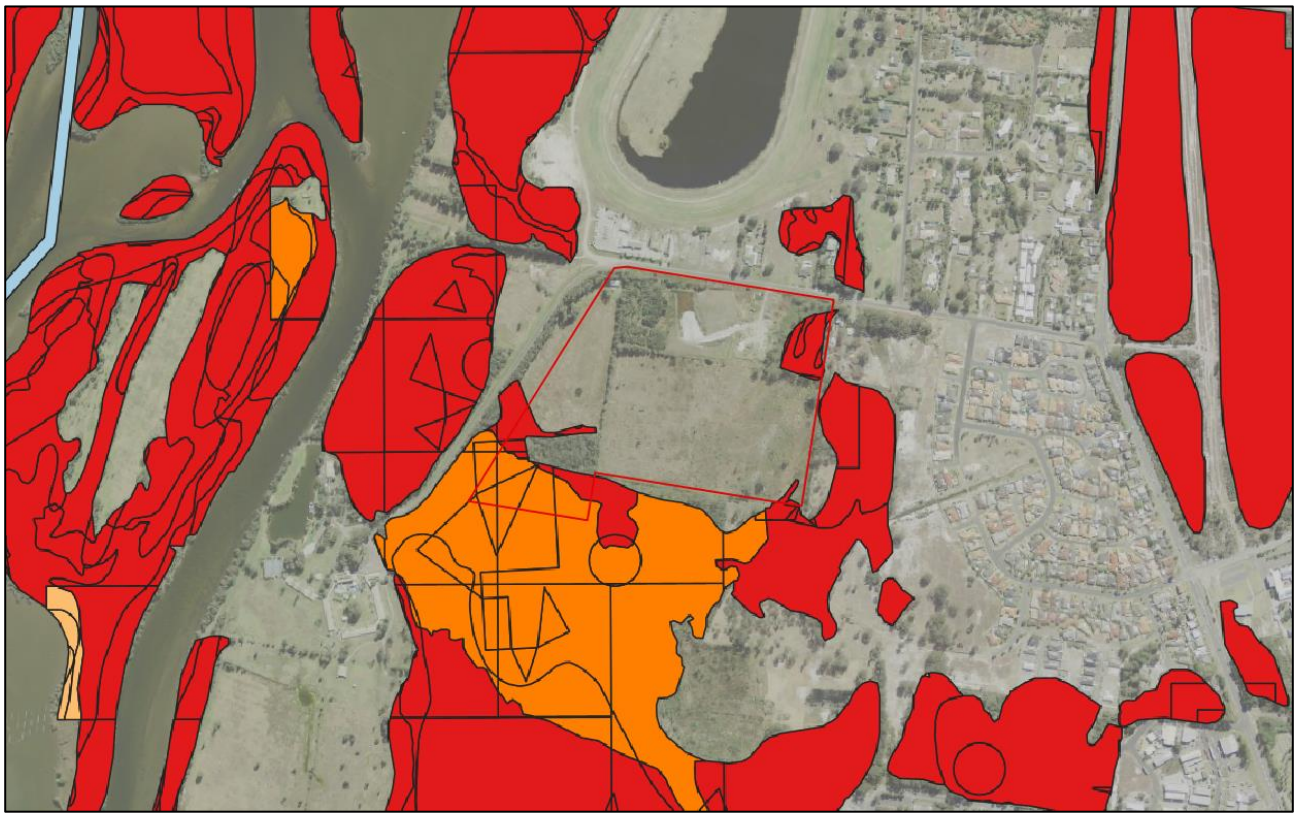

Figure 8: High potential for terrestrial GDE (red), medium potential for terrestrial GDE (orange), high potential for aquatic GDE (blue), site boundary shown in red outline.

6. Previous Investigations

6.1 Detailed site investigation – Regional Geotechnical Solutions (RGS, 2022; RGS, 2023)

Regional Geotechnical Solutions (RGS) has undertaken a detailed site investigation for contamination at the site in 2022 (RGS, 2022). Following council comments an addendum to the detailed site investigation was also undertaken (RGS, 2023). Scope of work for this previous investigation by RGS included site walkover, excavation of 55 test pits, installation of four wells, soil and water sampling and analysis of collected samples for testing.

During the site walkover by RGS on 4 October 2022 the site was described as follows:

- The eastern and western portions of the site are cleared of mature trees with mulching in progress;
- The central portion of the site has been extensively filled above natural grade;

- An asphalt access road, from Chapmans Road to the central portion of the site; and
- Various stockpiles of materials such as aggregate, road base, gravel, vegetation and anthropogenic materials scattered across the site.

Subsurface conditions encountered in test pits generally comprised:

- Fill:
  - In above ground stockpiles, generally in the eastern portion of the site, generally comprising of sandy gravelly CLAY / sandy GRAVEL / clayey gravelly SAND / sandy GRAVEL;
  - In the central portion of the site, generally comprising SAND with some shell; underlain by
- Sand / clayey sand (slightly indurated in areas): grey / pale grey to termination depth with maximum investigation to 2.6 m below ground level.

Groundwater monitoring wells (MW1 to MW4) were installed on 7 September 2022 by RGS. The monitoring wells were installed using a 6T Excavator with 100 mm diameter auger to depths of 2.0 m. Locations of MW1 to MW4 are included on Drawing 1, Appendix A and borehole logs are in Appendix C.

Subsurface conditions encountered in MW1 to MW4 generally comprised:

- Fill / topsoil / clayey sand: dark grey / black, some roots to depths of between 0.2 m to 0.7 m; underlain by
- Sand / clayey sand (slightly indurated in areas): pale grey / grey / pale brown / dark brown to the termination depth of 2.0 m.

Groundwater was observed at depths between 0.5 m and 1.0 m during drilling.

Groundwater monitoring well construction details were not provided on borehole logs by RGS. MW1, MW3 and MW4 were inspected by Douglas in May 2023, at the time of inspection MW2 was destroyed. A summary of the observed monitoring well construction is provided in Table 4.

Table 4: Groundwater monitoring well construction (MW1, MW3 and MW4)

Well	Depth (m)	Screen length (m)	Depth to bottom of screen (m)
MW1	2.0	1.5	2.0
MW2	Destroyed prior to May 2023		
MW3	2.0	1.5	2.0
MW4	2.0	1.5	2.0

Notes to table:
Screen lengths were measured with a steel tape and are therefore approximate only.

It should be noted that groundwater levels are affected by factors such as climatic conditions and soil permeability and will therefore vary with time.

6.2 Groundwater study and preliminary groundwater investigation – Douglas (Douglas, 2023; Douglas, 2024a)

Douglas has previously completed a Groundwater Study for 40-80 Chapmans Road, Tuncurry (Douglas, 2024a) and a Preliminary Groundwater Investigation at 82 Chapmans Road, Tuncurry (Douglas, 2023). Pertinent results are summarised below.

The general subsurface conditions at Bore 101 to Bore 104 comprised the following:

- Sandy silt/silty sand (topsoil): Generally comprising dark brown, sandy silt/silty sand with rootlets to depths of between 0.1 m and 0.2 m below ground level (bgl). Encountered in all bores except Bore 102;
- Silty sand/sand: Dark brown/brown/pale brown/pale grey, silty sand / sand, with varying proportions of silt to the termination depth of 2.75 m bgl (limit of investigation).

Locations of MW1, MW3, MW4 and 101 to 105 is shown in Drawing 1, Appendix A and borehole logs are in Appendix C.

In-situ hydraulic conductivity testing was completed at MW1, MW3, MW4 and 101 to 104 during field work. Copies of the analysis sheets are in Appendix C with the results are summarised below.

Table 5: Summary of in-situ hydraulic conductivity tests (Douglas, 2023; Douglas, 2024a)

Well	Material screened	Well construction			Number of tests	Estimated horizontal hydraulic conductivity (Hvorslev, 1951)	
		Casing radius (m)	Gravel radius (m)	Effective screen interval (m)		m/second	m/day
MW1	Sand	0.025*	0.075*	1.5*	4	0.1 to 1.3 x 10^{-4}	1 to 11
MW3	Clayey sand	0.025*	0.075*	1.5*	4	2.0 to 7.7 x 10^{-5}	2 to 7
MW4	Clayey sand	0.025*	0.075*	1.5*	7	0.3 to 1.6 x 10^{-4}	5 to 14
101	Sand	0.025	0.075	1.56	4	7.3 to 8.8 x 10^{-5}	6 to 8
102	Sand	0.025	0.075	1.65	3	1.6 to 3.8 x 10^{-5}	1 to 3
103	Sand	0.025	0.075	1.75	4	6.5 to 7.4 x 10^{-5}	6 to 7
104	Sand	0.025	0.075	1.75	4	0.9 to 1.1 x 10^{-4}	8 to 10

Notes to table:
* Well construction detail not available, value assumed

In-situ screening of surface waters for field parameters, measured using a hand-held calibrated meter on 1 May 2023 (locations W1 to W13) and 28 June 2023 (locations W101 and W102). The locations were screened to give a broader understanding of water quality in nearby surface water bodies. Locations are shown in Figure 9 and results are summarised in Table 6.

Figure 9: Approximate location of surface water screening (W1 to W13, W101 and W102)

Table 6: Summary of Field screening of surface waters (Douglas, 2023; Douglas, 2024a) - W1 to W13 (1/5/2023) and W101 to W102 (28/6/2023)

Location			Easting	Northing	RL (AHD)	Temperature	pH	EC (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)
On site	W1	Low lying area, south eastern portion of the site	451321	6441984	1.4	24.5	7.0	0.27	81	5.8	1
On site	W2	Low lying area, north eastern portion of the site	451367	6442063	1.5	21.3	5.6	0.29	154	4.9	28
On site	W3	Low lying area, northern boundary of the site	451230	6442138	1.1	21.2	6.2	0.60	-3	1.1	>1000
On site	W4	Low lying area, northern boundary of the site	451180	6442152	1.1	22.5	6.3	0.51	-25	2.3	157
On site	W101	Surface water body, western portion of the site	450929	6441937	-	11.7	8.0	0.408	67	11.6	110
On site	W102	Surface water body, eastern portion of the site	451370	6441908	-	12.3	6.3	0.111	155	5.9	410
Off site	W5	Surface water body, Tuncurry Lakes Resort	450423	6441736	0.1	22.6	6.8	23.00	83	5.4	2
Off site	W6	Wallamba River	450292	6441654	0.1	22.2	7.0	21.20	54	6.4	5
Off site	W7	Table drain, north side of Chapmans Road	450625	6441744	0.5	19.4	7.5	0.97	-19	6.7	3

Table 6: Summary of Field screening of surface waters (Douglas, 2023; Douglas, 2024a) - W1 to W13 (1/5/2023) and W101 to W102 (28/6/2023)

Location			Easting	Northing	RL (AHD)	Temperature	pH	EC (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)
Off site	W8	Table drain, south side of Chapmans Road	450700	6441820	0.6	20.5	6.8	0.07	3	6.5	42
Off site	W9	Table drain, south side of Chapmans Road	450816	6441987	0.5	20.1	7.4	0.42	21	6.9	43
Off site	W10	Surface water body, racecourse	451320	6442876	0.5	21.4	8.0	0.35	42	10.3	7
Off site	W11	Concrete lined drain adjacent to Viola Circuit	451670	6441747	1.8	19.7	7.7	0.26	56	6.0	54
Off site	W12	Wallamba River	451278	6439501	0.3	21.4	7.4	41.00	115	6.6	6
Off site	W13	Coolongolook River	452842	6439352	0.3	21.5	7.8	49.40	79	6.5	2

Notes to table:
Co-ordinates of tested locations were measured using a hand-held GPS and therefore coordinates are approximate only.
EC – electrical conductivity
NTU – Nephelometric Turbidity Units
DO – dissolved oxygen
ORP – oxidation reduction potential

6.3 Infiltration testing – Douglas (Douglas, 2024b)

Douglas has previously conducted infiltration testing at the site at 12 locations (201 to 212). The location of 201 to 212 is shown in Drawing 1, Appendix A. Infiltration testing included excavation of a test pad to a depth below topsoil, double ring infiltrometer testing in the stripped surface, and drilling of a hand auger (to observe groundwater). The testing included testing within existing site filling, as well as within natural soils.

Locations of 201 to 212 is shown in Drawing 1, Appendix A and borehole logs and double ring infiltrometer sheets are in Appendix C with the results are summarised below in Table 7 and groundwater observations during testing in Table 7.

Table 7: Summary of double ring infiltrometer testing

Location	Soil tested	Depth tested	Estimated infiltration rate		Estimated vertical saturated hydraulic conductivity*
		m	m/s	mm/hour	m/s
201	Fill/sand	0.5	3.6×10^{-4}	1290	3.3×10^{-4}
202	Sand with silt	0.2	2.2×10^{-5}	79	1.9×10^{-5}
203	Sand	0.2	1.7×10^{-4}	597	1.5×10^{-4}
204	Sand	0.2	2.8×10^{-5}	99	1.4×10^{-5}
205	Sand	0.2	6.6×10^{-6}	23	2.2×10^{-6}
206	Sand	0.3	5.2×10^{-5}	186	4.0×10^{-5}
207	Fill/sand	0.1	5.7×10^{-4}	2058	5.2×10^{-4}
208	Fill/sand	0.2	8.0×10^{-4}	2872	6.4×10^{-4}
209	Fill/sand	0.0	9.5×10^{-4}	3412	8.6×10^{-4}
210	Fill/sand	0.2	1.2×10^{-4}	449	1.2×10^{-4}
211	Clayey sand	0.3	Infiltration not observed over 45 minutes		
212	Clayey sand	0.2	Infiltration not observed over 20 minutes		

Notes to table:
* Estimated using the method presented in a paper in the Journal of Geotechnical Engineering (Daniel, D.E., 1989).

Table 8: Summary of groundwater observations (30/11/2023 and 1/12/2023)

Bore	Surface level (AHD)	Depth to groundwater (m)	Groundwater level (AHD)
201	2.1	NE to 1.0	-
202	1.5	0.90	0.55
203	1.7	0.80	0.89
204	1.1	0.30	0.76
205	1.0	0.45	0.58
206	1.3	0.60	0.67
207	2.1	NE to 0.9	-
208	2.9	NE to 0.4	-
209	2.7	NE to 0.3	-
210	2.3	NE to 1.2	-
211	0.7	0.35	0.36
212	0.8	0.35	0.40

Notes to table:
NE Not encountered

6.4 Groundwater monitoring – Douglas (Douglas, 2024c)

Douglas has conducted groundwater level monitoring at the site with dataloggers at eight locations across the site. Groundwater level is monitored using a datalogger which is installed in each monitoring well and measures water pressure at 20-minute increments.

The purpose of the monitoring is for the assessment and comment on short-term and long-term trends in groundwater levels (groundwater fluctuations). Monitoring conducted to date is summarised in Table 9.

Table 9: Summary of groundwater monitoring conducted to date

Well	Monitoring commenced	Monitoring concluded	Total months of data capture
MW1	May 2023	November 2024	19*
MW3	May 2023	Ongoing	19
MW4	May 2023	Ongoing	19
101	August 2023	Ongoing	16
102	August 2023	Ongoing	16
103	August 2023	Ongoing	16
104	August 2023	Ongoing	16
105	August 2024	Ongoing	3

Notes to table
* MW1 datalogger malfunctioned between November 2023 to August 2024 therefore data is approximate only.

Summary of groundwater depths and levels measured to date is provided in Table 10.

Table 10: Summary of groundwater depth and level (MW1, MW3, MW4 and 101 to 105)

Well	Well depth (m)	Range of groundwater depth (m)		Range of groundwater level (RL - AHD)	
		Min	Max	Min	Max
MW1	2.0	-0.2*	0.9	0.6	1.7*
MW3	2.0	0.0	0.8	0.3	1.1
MW4	2.0	0.5	1.3	0.2	1.1
101	2.75	0.0	1.1	0.7	1.8
102	2.75	0.1	1.3	0.5	1.6
103	2.75	-0.2	0.6	0.2	0.9
104	2.75	-0.2	0.5	0.1	0.8
105	1.93	0.5	0.8	1.0	1.3

Notes to table
RL Reduced level (m AHD)
m bgl metres below ground level
* Datalogger malfunction, therefore is considered approximate only
Negative depths indicate ponding above the surface

For rainfall up to 5 February 2024 the data is plotted against composited rainfall data from five Bureau of Meteorology (BOM) weather stations at (Wootton, Bungwahl, Old Bar, Forster and Taree Airport). On 6 February 2024 a site rainfall gauge was installed by ADW Johnson and therefore from 6 February 2024 onwards the data is plotted against site rainfall gauge. Datalogger data collected to date, plotted against rainfall is included in Appendix C.

7. Groundwater Flow

Estimated groundwater contours representing conditions on 5 November 2024 are presented on Figure 10 and are based on groundwater levels measured at MW1, MW3, MW4, 101 to 105 on 5 November 2024.

The relative differences in groundwater levels between monitored wells has been generally maintained throughout groundwater monitoring to date (see Figure 1 and Figure 2, Appendix C).

Estimated groundwater contours from manual gauging on 5 November 2024 are shown in Figure 10. Groundwater contours suggest groundwater to be flowing to the west on the date dipped.

Figure 10: Estimated groundwater contours 5 November 2024 in blue, inferred groundwater flow direction shown as red arrows, site boundary shown in red outline.

8. Conceptual Hydrogeological Model

8.1 Pre-development

Groundwater strata beneath the site comprise unconfined aquifers within alluvial/aeolian sands of relatively high permeability (see Section 6.2). This unconfined aquifer is understood to be primarily sandy with a high transmissivity for groundwater flow, noting that permeability of soils may decrease with clastic sediments to the west of the site (closer to Wallamba River). Lower permeability layers or lenses, comprising silt or indurated sand may also be present, but these are not expected to be confining layers.

Based on previous site investigations in Tuncurry by Douglas, the base of the unconfined aquifer is at least 10 m deep, with registered bore GW78858 about 950 m south east of the site suggesting clay at a depth of 21 m (see Section 5.3).

Groundwater flow is typically following surface topology, which is generally to the west (see Section 7), however flow directions may potentially be dependent on seasonal conditions.

The groundwater monitoring for the site to date indicates the groundwater at the site within less than a metre of the surface during dryer periods and reaching the ground surface during wetter periods such as occurred in April and May 2024, reaching the surface. Shallower groundwater is present in the western area of the site (Well 103 and 104), where groundwater levels were observed to be at or above the ground surface on occasion, particularly often between May 2024 to November 2024. Additionally, lower infiltration rates were observed during infiltration testing in the western area of the site. These lower rates may be attributable to the shallow depth to water table in that area of the site.

Groundwater levels are responsive to rainfall events and the groundwater levels fall relatively quickly after these events, generally returning to previous levels within about a week in the absence of additional rainfall Based on analyses of a selection of isolated rainfall events (10 and 19 February 2024, 4 and 30 April 2024 and 23 October 2024) which coincide with site rainfall gauge readings of between 31 mm to 187 mm per day, the ratio of the response of groundwater level compared to rainfall amount for each event ranged from about 1 to 10 across monitored wells. Assuming 30% recharge, this is equivalent to a specific yield of between about 0.04 and 0.35.

Groundwater recharge will generally be controlled by rainfall. Surface water bodies within the site may be sources of recharge and may locally mound groundwater. The surface water body at the racecourse to the north of the site may be an additional source of recharge and discharge and may impact groundwater flow directions.

During and after relatively wet rainfall conditions groundwater levels can be expected to come close to or above the surface and groundwater flows may be locally affected by surface drainage features (if any) or surface topography, and may follow the surface water flow directions as shown by the blue arrows on Drawing 1, Appendix A. Due the high transmissivity of the aquifer, as well as likely high evapotranspiration levels due to shallow groundwater, levels can be expected to fall relatively quickly in periods of drier rainfall conditions.

When groundwater levels fall below the surface then groundwater flow directions are likely to become more regional and controlled by the larger permanent surface water features, with flow approximately to the west as shown by the red arrows on Drawing 1, Appendix A.

A residual rainfall mass balance (RRMB) has also been undertaken on the long-term rainfall records from Taree Airport (AWS), which have been collected by BOM continuously since 1997 to November 2024. A RRMB provides a cumulative plot of above or below average rainfall over the length of the rainfall records. A slope upwards on the plot indicates above average rainfall whereas a slope downward indicates below average rainfall (over the length of rainfall records). The RRMB calculated from Taree Airport (AWS) rainfall records is shown in Figure 11.

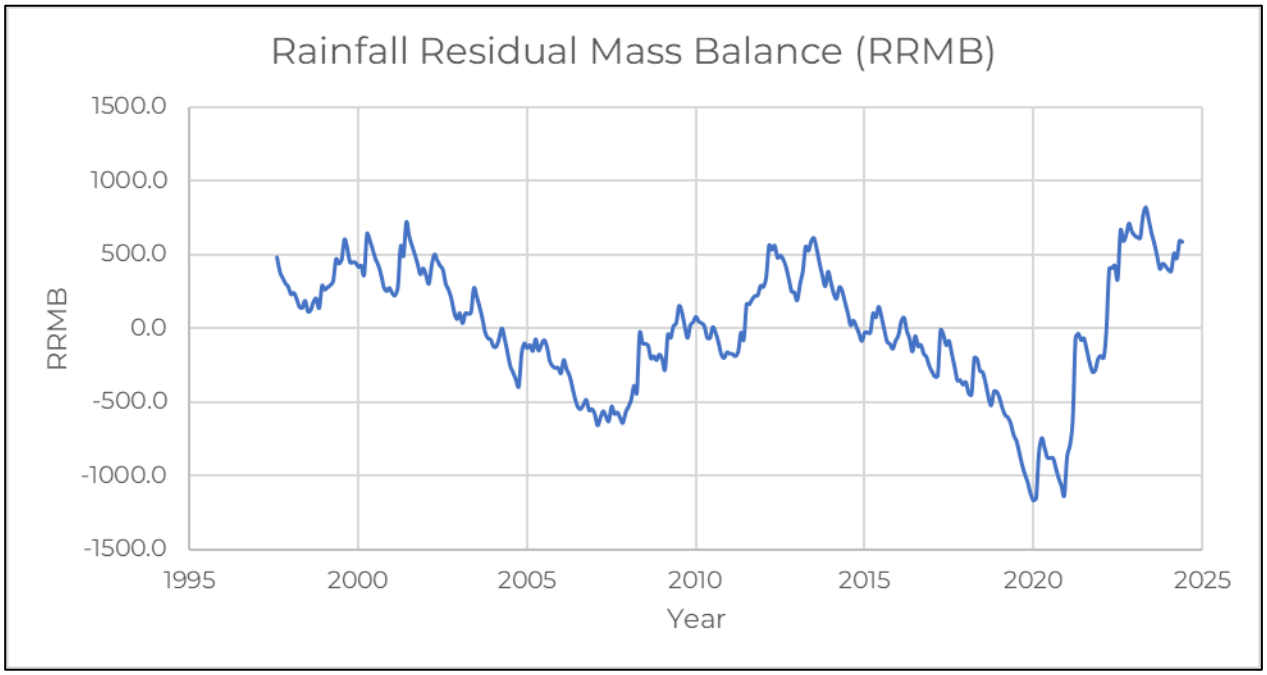

Figure 11: Residual rainfall mass balance (RRMB) from Taree Airport (AWS).

The RRMB plot indicates generally increasing overall trend in rainfall since about 2021, with below average rain for much of the monitoring period since mid-2023. September/October 2024 have seen upwards trending above average rainfall.

Groundwater levels in many aquifers often have similar trends to the RRMB trend line, however in this case the aquifer is highly constrained by boundary conditions, especially the surface, and therefore water levels are more related to shorter terms rainfall events. Lower bound water levels are constrained by the relatively close river with groundwater levels after extended periods unlikely to drop below average tide levels.

8.2 **Post-development**

The following components of the proposed development have the potential to impact groundwater:

- The construction of impervious surfaces such as building roofs, footpaths and roads will reduce both recharge and evapotranspiration on much of the site and concentrate recharge into raingardens/basins, resulting in groundwater mounding;
- Vegetation removal (trees, shrubs, grass etc) may reduce evapotranspiration and infiltration rates whilst maintaining/increasing recharge, resulting in groundwater mounding;
- Filling above current site levels provides the opportunity for elevated groundwater within fill;
- Raingardens/detention basins that infiltrate run-off into the unconfined aquifer may impact groundwater flows and quality;
- If there are no controls, potential contamination to groundwater/surface water from site filling during and post development.

9. Numerical Modelling

9.1 Overview

A steady state groundwater model was considered appropriate to approximate long term average groundwater levels at the site. The purpose of developing the steady state model was to approximately replicate the existing groundwater flow regime on the site and then use this model to estimate the potential for changed groundwater conditions as a result of the proposed development under steady state conditions.

Based on the conceptual groundwater model, steady-state groundwater flow models were developed using the graphical user interface Visual MODFLOW Flex using MODFLOW 2005 numerical engine.

9.2 Model cases

To estimate the degree of groundwater mounding prior to development and after development using a steady state model, two cases were modelled. The cases are as follows:

- Pre-development - the current site and surrounds; and
- Post-development - after filling of the site and construction of manufactured housing estate.

Additionally, a sensitivity analysis was undertaken to understand the predictive modelling sensitivity to variability in seasonal conditions. Sensitivity analysis was undertaken for the following scenarios:

- Wet average conditions assuming 30% increase in rainfall compared to the base case; and
- Dry average conditions assuming 30% decrease in rainfall compared to the base case.

9.3 Model layers

The groundwater system was represented by a single layer of sand which represents the unconfined aquifer. Based on previous site investigations in Tuncurry by Douglas, the base of the unconfined layer at the site has been assumed to be at RL – 20. It is noted that the bottom of unconfined aquifer may be shallower or deeper at the site however for this report, the depth of the natural sands are not considered to be a sensitive component of the modelling.

The existing surface level of the model was based on NSW Spatial Services 1 m Digital Elevation Model (DEM) for Bulahdelah and Forster dated 2012. Contours of the surface elevation are shown below in Figure 21.

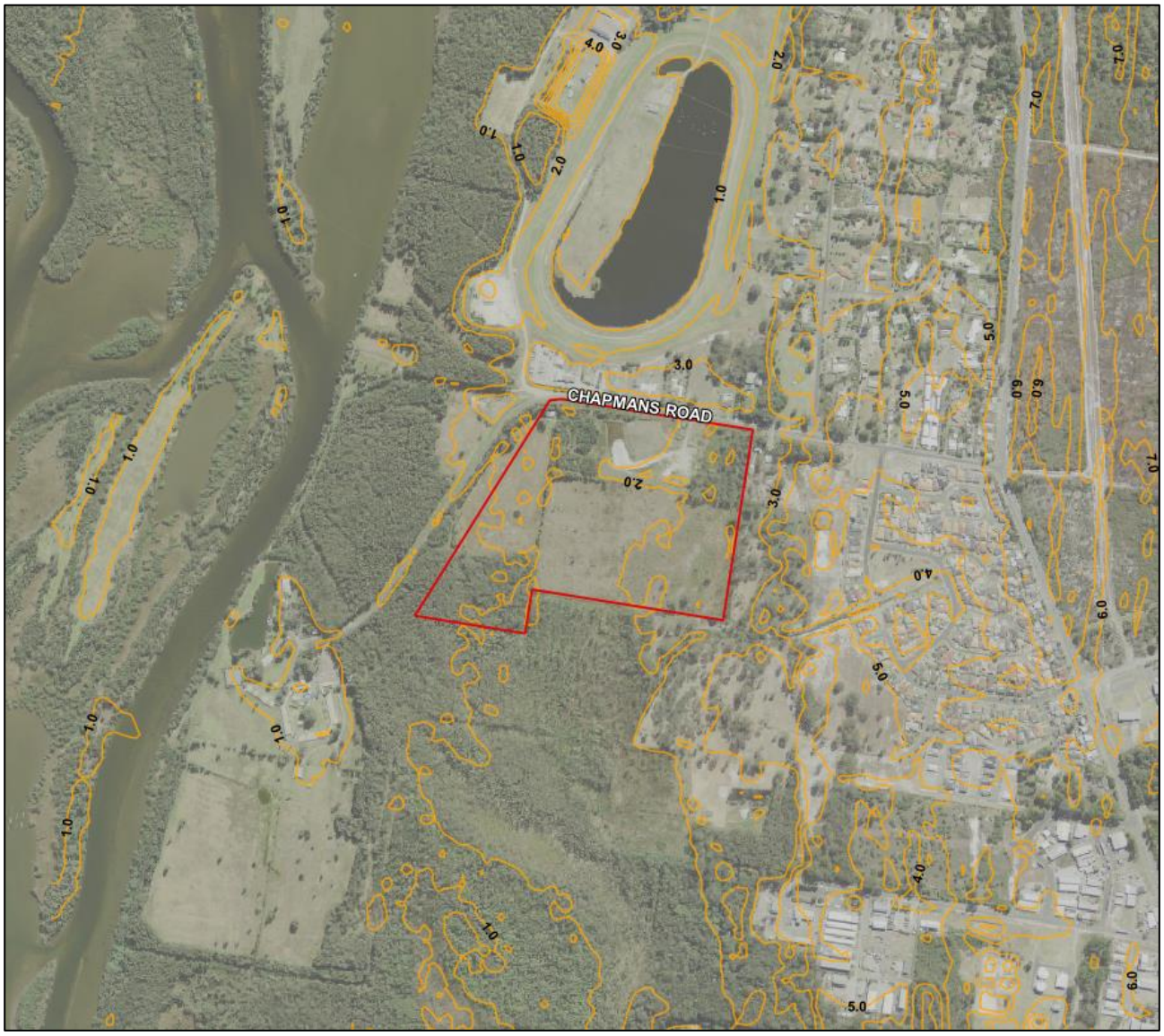

Figure 12: Pre development ground surface, 1 m contours (m AHD) imported into MODFLOW, site boundary shown in red outline

9.4 Model extents and boundary conditions

The extent of the model was set to boundaries which could be reasonably defined as follows:

- The western extent of the model was approximately 500 m from site at Wallamba River and set as a constant head boundary condition of RL 0.5;
- The eastern extent of the model was approximately 2000 m from the site at Pacific Ocean and set as a constant head boundary condition of RL 0.5;
- The remaining extents were a minimum of 1500 m from the site. These boundaries are significantly distant from the site to reduce impacts on the model at the subject site.

The overall size of the model was 5 km from the east to west and 4 km from the north to south, discretised using a non-uniform grid (focused on the site becoming coarser with distance from the site) of 602 columns and 712 rows rotated 80 degrees to approximately align parallel to

Chapmans Road. The grid size was a maximum of 200 m by 200 m (off site) grading to a minimum of 1 m by 1 m (on-site). The size of the grid was selected to allow reasonable representation of the site, site specific features and proposed features including proposed raingardens.

9.5 Model parameters

Hydraulic parameters required for the model included hydraulic conductivity. Initial estimates were obtained from the particle size distribution and slug tests. The permeability of the sand was found to be in the range of 1.6 x 10^{-5} m/sec to 1.6 x 10^{-4} m/sec (geometric mean of 6.3 x 10^{-5}). Parameters used in the development of the model were:

- Horizontal Hydraulic conductivity (KH) = 6.3 x 10^{-5} m/sec;
- Vertical to horizontal permeability ratio = K_V / K_H = 0.2.

Total porosity (TP) and effective porosity (EP) are also required for the model. Initial estimates of TP and EP were obtained from literature. Parameters used in the development of the model were:

- TP = 0.3
- EP = 0.3

9.6 Recharge and Evapotranspiration

Rainfall and runoff are the major components of aquifer recharge. As the runoff component is difficult to estimate and assumed to be minor compared to rainfall infiltration. As such, runoff was not included in the groundwater model.

The site is located near to Taree Airport AWS (060141) weather station. According to data from Bureau of Meteorology (BOM) for this weather station between 1997 to November 2024:

- Average monthly temperatures vary between 6.7°C (July) to 29.0°C (January).
- Average monthly rainfall varies between 195 mm/month (March) and 44 mm/month (August).
- Mean annual rainfall was reported as 1154 mm/year with a maximum annual rainfall of 1970 mm/year (2022).

Evapotranspiration (ET) data was obtained from BOM for Taree Airport AWS (060141) for a period of about four years (January 2020 to November 2024). Average annual ET was reported to be 1181 mm/year with a maximum ET of 1223 mm/year (2023).

The mean annual rainfall was utilised in the model, then calibrated to adjust the percentage of rainfall entering the model to observed groundwater level in wells. Calibrated recharges percentages are shown in Table 11 and initial evapotranspiration parameters are shown in Table 12.

Table 11: Pre-development recharge parameters

Mean annual rainfall (Taree Airport AWS 1997-2024) (mm/year)	Calibrated recharge (% rainfall)	
	Undeveloped areas	Developed areas
1154	20	10

Table 12: Pre-development evapotranspiration parameters

Mean evapotranspiration (Taree Airport AWS 2020-2024) (mm/year)	Evapotranspiration (% ET)		Extinction depth (m)
	Undeveloped areas	Developed areas	
1181	50	50	2

9.7 Visual MODFLOW Flex settings

The following settings were selected in Visual MODFLOW Flex version 10 to best simulate conditions expected at the site:

- Flow Type: Saturated (Constant Density); and
- Numeric Engine: USGS MODFLOW 2005.

9.8 Pre-development groundwater model

Calibration of a flow model refers to the trial and error process by which model parameters are adjusted to produce an acceptable match between simulated and observed groundwater levels (during the monitoring period).

The steady state calibration of three cases was aimed at reproducing the observed groundwater levels in groundwater monitoring wells on 5 November 2024 and expected flow patterns in the geometry of the model. Comparison of observed water level and modelled water level are shown below in Table 13.

Table 13: Calibration of model

Well	Observed water level (AHD) (05/11/2024)	Modelled water level (AHD)	Difference in calibration
MW1	0.97	1.20	+0.23
MW3	0.72	0.73	+0.01
MW4	0.64	0.79	+0.15
101	1.15	1.27	+0.12
102	0.88	0.90	+0.03
103	0.64	0.50	-0.13
104	0.61	0.39	-0.21
105	1.03	1.29	+0.27
Average			+0.06

Overall, the model calibration provides an acceptable representation of the groundwater system and is considered suitable for the purposes of assessing the sensitivity of the groundwater system to changed induced by the proposed development.

It is a noted that a steady state calibration is non-unique and that there is a range of possible combinations of hydraulic conductivity vs recharge which would produce a similar calibration. In reality the hydraulic conductivity and therefore calibrated recharge could vary by about 50% to 200%. The hydraulic conductivity adopted is expected to be moderately conservate and therefore actual hydraulic conductivity more likely to be on the higher side than lower. For the purposes of assessment potential mounding due to the development each matching pair or recharge/hydraulic permeability would be expected to result in similar results, with higher permeability having slightly less mounding.

The modelled groundwater levels for pre-development scenario are shown in Figure 13 below.

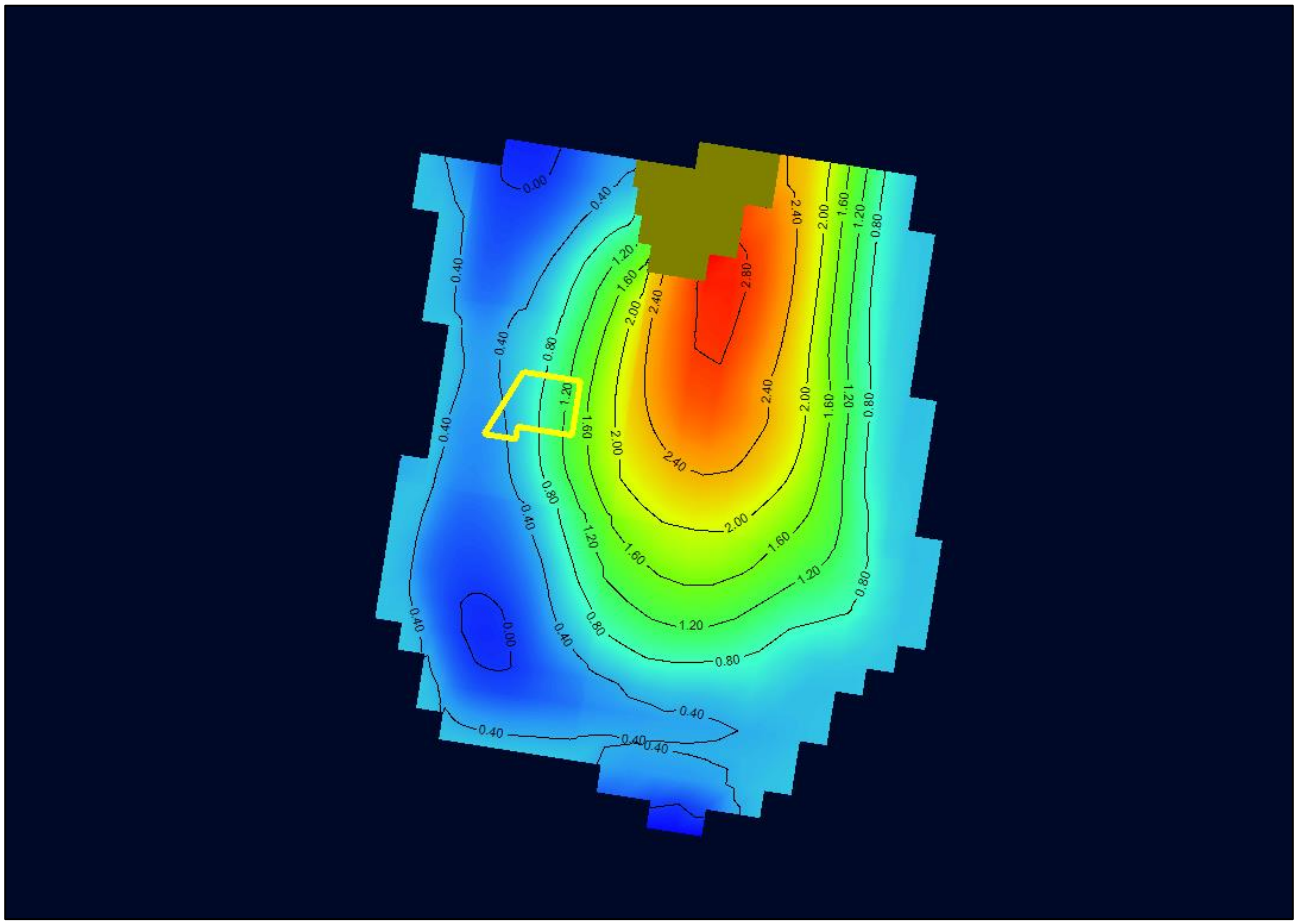

Figure 13: Pre-development – modelled groundwater elevation, 0.4 m contours, site boundary shown in yellow outline

9.9 Post-development groundwater model

Modelling the proposed development is based on pre-development model, with some changes relevant to proposed development. Reference to provided Stormwater Plans (ADWJ drawing 190835-32-WCMP-001 to 009 revision A dated 29/11/2024), it is understood that portions of the site are 0%, 50%, 75% and 90% impervious.

To model the post-development scenario, the following changes were made (relative to pre-development scenario):

- Surface contour at the site changed to filled levels based on supplied DEM;
- Recharge at the site is modified proportional to % impervious (considering the calibrated recharge for undeveloped areas of the site was 20% rainfall);
  - 0% impervious: 20% rainfall;
  - 50% impervious: 10% rainfall;
  - 75% impervious: 5% rainfall; and
  - 90% impervious: 2% rainfall.

- Additional recharge in raingardens to account for run-off from impervious areas (see Table 14 below).
  - Catchment area, raingarden area and proposed development within each catchment is considered when calculating run-off and therefore is calculated for each Catchment separately.
  - Calculation of run-off assumes that all rainfall landing on impervious areas contributes to run-off proportional to % impervious, e.g. for 75% impervious areas, 75% of rainfall contributes to run-off and is equally distributed over raingarden areas.

Table 14: Post-Development Recharge in Raingardens

Catchment	Catchment area (m^2)	Total raingarden area (m^2)*	Direct rainfall in basin (% rainfall)	Recharge from run-off (% rainfall)
1	44000	697	20	4275
2	73000	1411		2950
3	20000	490		2675
4	26300	665		2575

Notes to table:
* Sum of Raingarden A and Raingarden B
RL Reduced level (m AHD)

The modelled groundwater levels for pre-development scenario are shown in Figure 14 below and compared to pre-development scenario in Table 15.

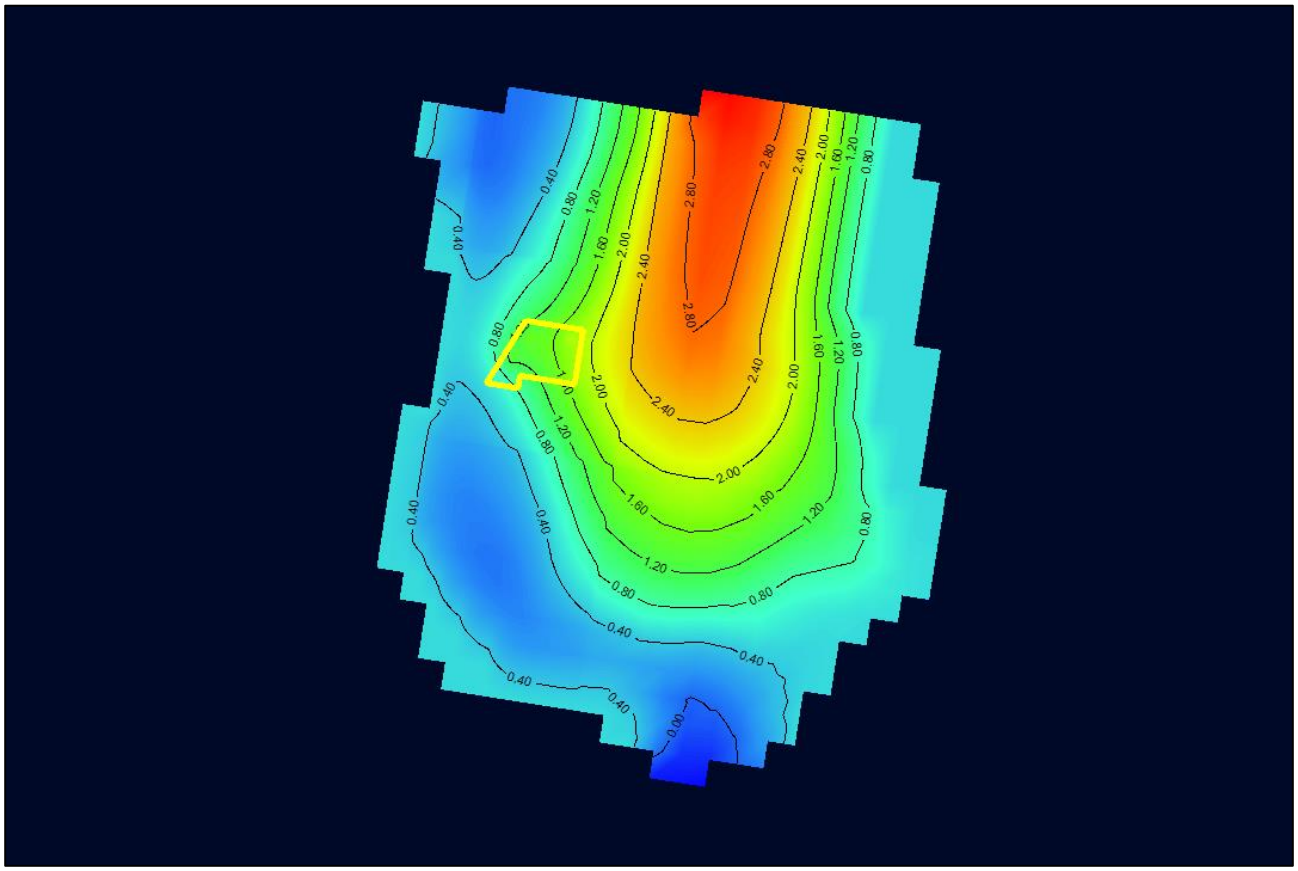

Figure 14: Post-development – modelled groundwater elevation, 0.4 m contours, site boundary shown in yellow outline

Table 15: Summary of modelling outputs

Location	Pre development	Post development	Predicted mounding (m)		
			Base case	Wet case	Dry case
MW1	1.20	1.79	0.59	0.65	0.48
MW3	0.73	1.48	0.75	0.87	0.58
MW4	0.79	1.44	0.65	0.74	0.52
101	1.27	1.80	0.53	0.60	0.43
102	0.90	1.38	0.48	0.57	0.38
103	0.50	1.16	0.66	0.78	0.51
104	0.39	1.06	0.67	0.80	0.51
105	1.29	1.82	0.53	0.57	0.45

Change of groundwater levels was also estimated at distances from the edge of the proposed development. The estimated change of groundwater level is summarised below in Table 16.

Table 16: Comparison of the change of modelled groundwater level at distances from site boundary

Distance from site (m)	Change of water level between Pre and Post(m)		
	Dry case	Base case	Wet case
25	0.3 to 0.6	0.4 to 0.7	0.4 to 0.8
50	0.3 to 0.5	0.3 to 0.6	0.4 to 0.7
100	0.2 to 0.4	0.3 to 0.5	0.3 to 0.6
200	0.1 to 0.3	0.2 to 0.4	0.2 to 0.4

9.10 Limitations of modelling

The precision of the results presented in Table 15 and Table 16 are not indicative of the accuracy of the modelling, the precision provided to allow comparison between pre and post development cases, with the actual accuracy less than the precision shown.

It is considered that the modelling undertaken provides a reasonable representation of the average groundwater flow conditions occurring on the site for the periods of the modelling and provides an indication of the likely average groundwater mounding which may occur below the site and surrounds following development. It is noted that the model does not account for transient effects and mounding that will occur in the shorter term following specific rainfall events, a transient model would be required to assess this. Similarly, localised effects in the immediate vicinity of any infiltration areas may be greater than presented in Table 15.

Changes in longer term climatic conditions will have impacts on overall groundwater levels across the site and surrounds and this would include potential climate change effects. Any future sea level changes would have a commensurate impact on groundwater level changes.

10. Estimated Groundwater Impacts

10.1 Proposed development impacts

Based on Douglas' understanding of the proposed development plans, the anticipated changes in site recharge conditions have been used to predict approximate average groundwater mounding below and around the site.

The groundwater modelling predicts mounding of up to about 0.8 m may occur under the site under average rainfall conditions.

These estimates are reliant on the type of fill placed and assume that sand filling will be used, and all low permeability being stripped from the site prior to filling. For low permeability fill the degree of mounding would be expected to be less due to reduced recharge and for intermediate permeability such as a silty sand the mounding could be higher.

The most likely time for mounding to occur within the fill is during construction before impervious surfaces and surface drainage has been installed, however, this is highly weather dependant. Mounding in the filling is only expected to be an issue when the water table comes within the depth of influence of building foundations, pavements and other infrastructure. Once the site is fully developed mounding is expected to occur in the vicinity of infiltration areas following rainfall events.

Higher mounding within the fill can be expected to occur in the following scenarios:

- During and following above average rainfall.
- During placement of filling and construction prior to construction of impervious areas
- In the vicinity of infiltration areas, in particular during and following specific rainfall events.

Short term mounding within the filling has some potential to impact on surface infrastructure such as building footings and road pavement and can be managed by appropriate installation of subsurface drainage with the fill.

A number of measures can be used to limit the propensity for mounding in the fill:

- Removal of all low permeability layers from the surface prior to placement of filling at the site. This is especially important if higher permeability filling is to be placed over. The need for removal of such material will depend on its lateral extent and what other measures are proposed to limit water levels as outlined below;
- Placement of higher permeability material in the lower parts of the filling, with any lower permeability material used at higher levels to form a capping layer;
- Installation of appropriate subsoil drainage about 1.0 to 1.5 m below the finished ground surface to protect pavements and building footings from saturation under more severe conditions;
- If fill other than sand with minimal fines is used, then careful consideration should be given to the layering of such soils to prevent placing lower permeability soils below permeable soils. Lower permeability soils, if used, will reduce the effectiveness of subsoil drainage and are preferably placed near the upper sections of fill to provide a capping above drainage measures.

Douglas has not specifically modelled the impacts of climate change which may have an overall impact on groundwater levels across the region commensurate with any changes in sea level that may occur in the future as well as potential changes in rainfall patterns. Development impacts are generally expected to be incremental to the background conditions and therefore modelling of climate change scenarios is not considered necessary to assess the incremental impacts from the proposed development.

10.2 **Off site impacts**

Modelling predicts that average groundwater levels will be elevated within the vicinity of the site due to the groundwater mounding. Under wet conditions the degree of mounding is predicted to be higher and lower under dry conditions.

Modelling predicts that groundwater dependent ecosystems near to the site will experience a general elevation of water table due to the proposed development.

The results of the groundwater model indicate a general elevation of the groundwater table in the vicinity of the site, particularly in wetter conditions, however, these average levels are within the seasonal variations observed by groundwater monitoring to date.

Given that some areas to the south and west of the site exhibit natural surface ponding of groundwater from time to time, this ponding can be expected to occur more often and to some increased extent under seasonally wetter conditions. The groundwater model is sensitive to regional permeability of subsurface soils. A moderately conservative permeability has been utilised in the groundwater model therefore the mounding may be less than those predicted by the groundwater model (i.e. higher regional permeability would result in a reduction of groundwater mounding).

11. Conclusions

The results of the groundwater assessment indicate that there is potential for increases in groundwater levels below the site and surrounds within.

Groundwater monitoring to date has shown these levels can come close to the surface following above average rainfall and this has the potential to affect surface infrastructure. Recommendations are provided to manage groundwater mounding within the site.

The predicted average level of mounding is within seasonal variations of groundwater level and reduces with distance from the site. Therefore negative impacts to groundwater level from the proposed development are expected to be limited. Additional surface ponding and groundwater seepage to surface drainage will likely occur on the surrounds of the site. Reduced average water levels potentially affecting GDEs or existing registered wells are not expected to occur.

The degree of groundwater mounding has been assessed against average groundwater level and average rainfall conditions over one month of groundwater monitoring and is therefore approximate only. Majority of the groundwater recharge is expected following large storm events and will result in a greater degree of mounding for these events due to above average recharge. A transient model would be required to quantify short term mounding.

Ongoing groundwater monitoring would be helpful to further establish baseline conditions and monitor potential post development impacts.

12. References

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13. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at 40-80 and 82 Chapmans Road, Tuncurry with reference to Douglas' proposal 219536.00.P.005.Rev0 dated 26 November 2024 and acceptance received from Stephanie Vanderent dated 26 November 2024. The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of Allam MHE Developments No. 2 Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by Douglas in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the groundwater components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. Douglas cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

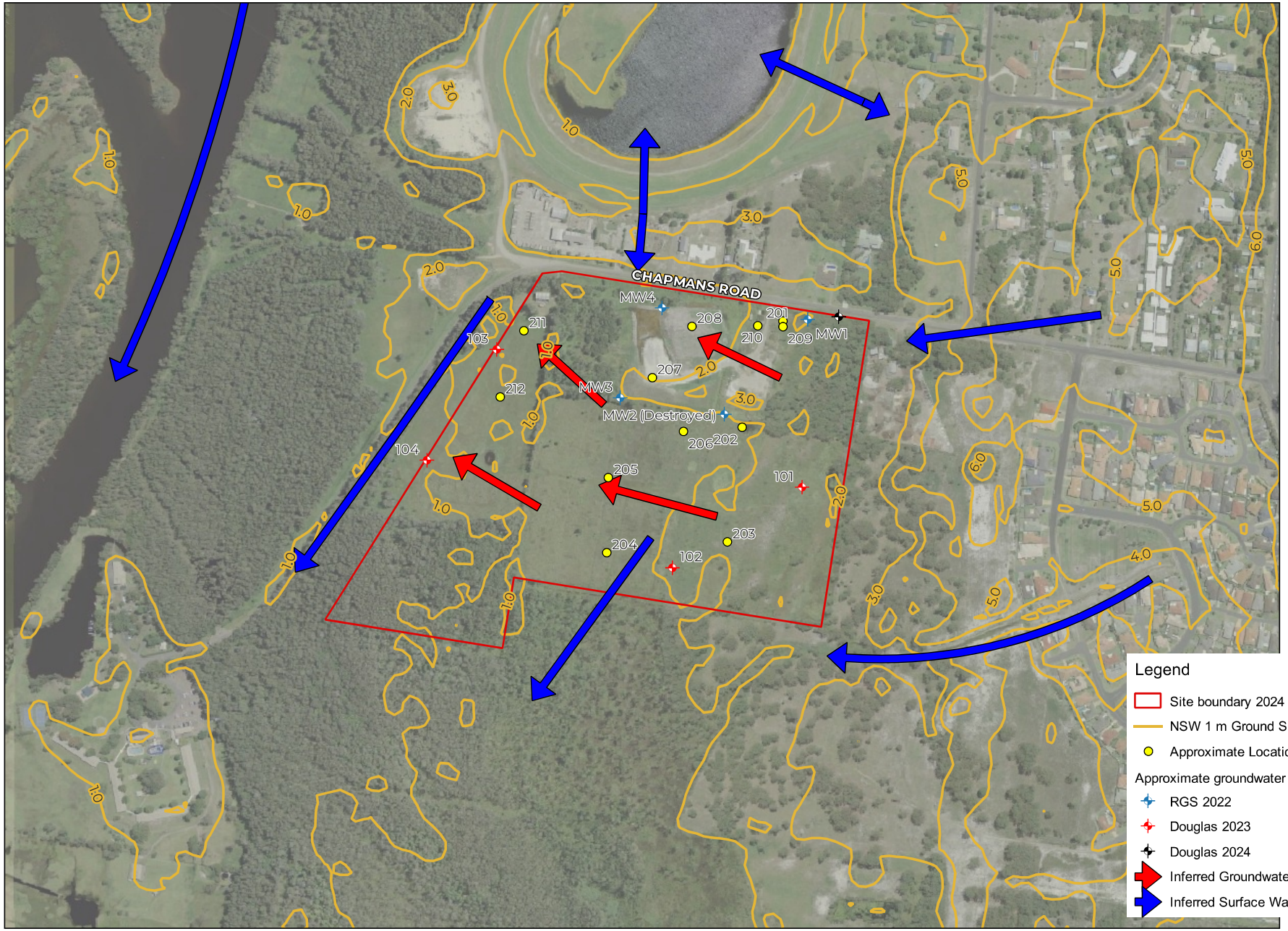
Appendix A

Drawing 1 – Site Plan and Inferred Surface Water and Groundwater Flow Directions

Detailed Survey – ADW Johnson – 190835-DET-001-A Revision A

Concept Engineer Plans (ADW Johnson - 190835 - CENG – Revision A dated 09/12/2024

Master Plan – ADW Johnson – 190835 – MP – Revision K dated 09/12/2024



Site Location

NOTE:
1. Drawing adapted from aerial imagery from Sixmas aerial.
2. Test locations are approximate only and were located using differential GPS typically accurate to ± 0.1 m depending on satellite coverage and considered approximate only.

Douglas PARTNERS	CLIENT: Allam MHE Developments No.2 Pty Ltd	TITLE: **Site Plan and Inferred Surface Water and Groundwater Flow Directions**	Project: 219536.00
	OFFICE: Newcastle / DRAWN BY: JCL	**Proposed Manufactured Housing Estate**	DRAWING No:R.010.D.001
	SCALE: 1:5000 @A3 / DATE: 09.December.2024	**40-80 and 82 Chapmans Road, Tuncurry**	REVISION: 0

DP:QGIS:A3LandscapeDrawingLayout:Rev2 - P:\219536.00 - TUNCURRY, 40-80 Chapmans Rd, Groundwater\7.0 Drawings\7.2 Out\219536.00.qgz

SUBSURFACE UTILITY INVESTIGATION (SUI) QUALITY LEVEL
LABELLING UTILITY INFORMATION BY A CLASSIFICATION CODE ALLOWS THE USER OF THIS INFORMATION TO UNDERSTAND CLEARLY HOW THE INFORMATION WAS COLLECTED AND THEN PLACE AN APPROPRIATE AMOUNT OF RELIANCE ON IT. PROJECT RISKS RELATED TO UNDERGROUND UTILITIES CAN THEN BE PROPERLY MANAGED.

QL - 'A': INFORMATION IS THE HIGHEST POSSIBLE LEVEL OF ACCURACY AND IS OBTAINED BY EXPOSING THE UNDERGROUND UTILITY USING A NON-DESTRUCTIVE EXCAVATION (POTHOLING) TECHNIQUE. THE VERTICAL INFORMATION FOR THIS LOCATING METHOD IS TO THE TOP OR SHALLOWEST PART OF THE LOCATED SERVICE. THE 3D LOCATION IS RECORDED BY SURVEY AS AN X, Y, Z COORDINATE.

QL - 'B': INFORMATION IS COLLECTED BY DESIGNATING THE HORIZONTAL AND VERTICAL LOCATION OF UNDERGROUND UTILITIES BY USING ELECTROMAGNETIC PIPE AND CABLE LOCATORS, SONDES OR FLEXI-TRACE EQUIPMENT. THIS IS THE MOST COMMON FORM OF UTILITY LOCATING AND ALTHOUGH AN X, Y AND Z AXIS CAN BE ESTABLISHED IT IS NOT ALWAYS ENTIRELY ACCURATE DUE TO DIFFERING ELECTROMAGNETIC FIELDS, SOIL CONDITIONS AND MULTIPLE BANKS OF CABLES AFFECTING THE LOCATING SIGNAL.

QL - 'C': INFORMATION IS COLLECTED BY CORRELATING THE SURVEY OF VISIBLE UTILITY SURFACE FEATURES SUCH AS MARKER PLATES OR WATER HYDRANTS AND ACQUIRED DIAL-BEFORE-YOU-DIG PLANS TO "DRAW" A STRING WHICH SHOWS THE APPROXIMATE POSITION OF SERVICES. THIS METHOD DOES NOT USUALLY SHOW MULTIPLE BANKS OF CABLES AND DOES NOT ALWAYS SHOW THREE DIMENSIONAL INFORMATION.

QL - 'D': INFORMATION IS THE MOST BASIC LEVEL OF UTILITY LOCATIONS USING ONLY INFORMATION BASED ON EXISTING DIAL-BEFORE-YOU-DIG PLANS AND BY MEASURING BOUNDARY OFFSETS AS WELL AS ASSISTANCE VIA GROUND PENETRATING RADAR ETC. THIS METHOD OF UTILITY LOCATIONS SHOULD ALWAYS BE TREATED AS AN INDICATION OF THE PRESENCE OF A SERVICE ONLY AND SHOULD NOT BE USED FOR DESIGN.

ALL UTILITIES ARE QL - 'D' UNLESS OTHERWISE NOTED

NOTES:-

1. PLEASE REFER TO AS5488-2013-CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION (SUI) FOR THE DEFINITION OF SERVICE LOCATION ACCURACIES SHOWN IN THIS PLAN.
2. ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN PLOTTED BY ESTIMATION BASED UPON SUPPLIED DBYD INFORMATION PLANS. ADDITIONAL SERVICES MAY EXIST THROUGHOUT THE SITE. TRUE LEVELS & POSITION WILL NEED TO BE VERIFIED BY POTHOLES BEFORE ANY CONSTRUCTION COMMENCES.
3. THERE MAY BE OTHER EXISTING SERVICES WITHIN THIS SITE WHICH ARE NOT SHOWN ON THIS PLAN.
4. WE NOTE THAT THERE ARE DISCREPANCIES BETWEEN TITLE DIMENSIONS AND ADJOINING REGISTERED SURVEY PLANS. BOUNDARIES ARE BASED ON PRELIMINARY BOUNDARY DEFINITION ONLY. ANY FUTURE PLAN OF SURVEY OF ADJOINING LOTS REGISTERED MAY IMPACT THE SUBJECT BOUNDARIES. IT IS RECOMMENDED THAT A PLAN BE REGISTERED WITH THE LAND REGISTRY SERVICE (LRS) NSW. ALL BOUNDARIES AND EASEMENTS ARE SUBJECT TO FINAL SURVEY AND REGISTRATION OF A PLAN WITH LRS NSW. ADJOINING BOUNDARY INFORMATION IS BASED ON DIGITAL CADASTRE DATABASE AND IS APPROXIMATE ONLY
5. THE SUBJECT LAND MAY BE IMPACTED BY ENCUMBRANCES SHOWN ON THE CERTIFICATE OF TITLE WHICH ARE NOT SHOWN ON THIS PLAN.
6. SPOT LEVELS AND CONTOURS SHOWN HEREON ARE FOR DESIGN PURPOSES ONLY AND ARE TO BE CONFIRMED ON SITE PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
7. THIS PLAN HAS BEEN PREPARED FOR THE PURPOSE OF DESIGN AND SHOULD NOT BE USED FOR ANYTHING OTHER THAN THAT PURPOSE.
8. SOME SPOT LEVELS & TREE ATTRIBUTES HAVE BEEN REMOVED FROM THE FACE OF THIS PLAN FOR CLARITY. SPOT LEVELS & TREE ATTRIBUTES CAN BE ACCESSED ON THE ELECTRONIC COPY OF THIS PLAN FOR MORE DETAILED DESIGN WORKS.
9. CO-ORDINATES SHOWN ON THIS DRAWING ARE DERIVED FROM A LOCALISED,GROUND DISTANCE BASED GRID, ESTABLISHED FROM THE MGA CO-ORDINATES OF SSM 85979.

   E. 452087.036
   N. 6441590.858
   R.L. 5.707

LEGEND

BDY	ROAD EDGE OF BITUMEN
BDY ADJOINING (DCDB)	ROAD EDGE OF CONCRETE
EASEMENTS	ROAD EDGE OF GRAVEL
MINOR CONTOUR	ROAD LIP LINE
MAJOR CONTOUR	ROAD TOP OF KERB
LEP ZONE LINE	SERV UGD COMMS CABLE QL D
BUILD	SERV UGD ELECTRICAL CABLE QL D
BUILD FENCE	SERV UGD SEWER PIPE QL B
FP BUILD FENCE POST	SERV UGD SEWER PIPE QL C
BUILD GATE	SERV UGD SEWER PIPE QL D
BOL BUILD POST BOLLARD	SERV UGD SEWER RISING MAIN QL D
COMMS PIT	SERV UGD WATER MAIN QL D
DRAINAGE	SMH SEWER MANHOLE
ELECTRICAL OVERHEAD ELECTRICITY	TOPO BOTTOM OF BANK
EPIT ELECTRICAL PIT	TOPO EDGE OF GARDEN
PP ELECTRICAL POLE	TOPO TOP OF BANK
STAY ELECTRICAL STAY POLE	TOPO TREE
? MISC MANHOLE	HYD WATER HYDRANT
ROAD CROWN	WM WATER METER
ROAD DRIVEWAY	SV WATER STOP VALVE

(B) EASEMENT FOR BATTER 6 WIDE (D.P.1181822)
(R2) LEP ZONE - LOW DENSITY RESIDENTIAL
(C2) LEP ZONE - ENVIRONMENTAL CONSERVATION

ver.	date	comment	surveyed	drawn	checked	pm
A	06.07.22	INITIAL ISSUE	K.R.	A.E.	B.W.I	D.B.

co-ordinate information
CO-ORDINATE SYSTEM: MGA 56
ORIGIN OF CO-ORDINATES: S.S.M. 85979
DATE OF SURVEY: 01.07.2022

level information
DATUM: AHD
ORIGIN OF LEVELS: S.S.M. 85979
CONTOUR INTERVAL: 0.25m

scale (A1 original size)
SCALE: 1:800 (FULL)

page
1 OF 3

GDA2020

WARNING OPTICAL FIBRE IN AREA
WARNING UNDERGROUND ELECTRICITY LINES
DIAL 1100 BEFORE YOU DIG

drawing title
DETAIL AND CONTOUR SURVEY UPON LOT 1 DP 304132

location: 40-80 CHAPMANS ROAD, TUNCURRY, 2428
council: MIDCOAST COUNCIL
dwg ref: 190835-DET-001-A (v2007)
client: ALLAM PROPERTY GROUP

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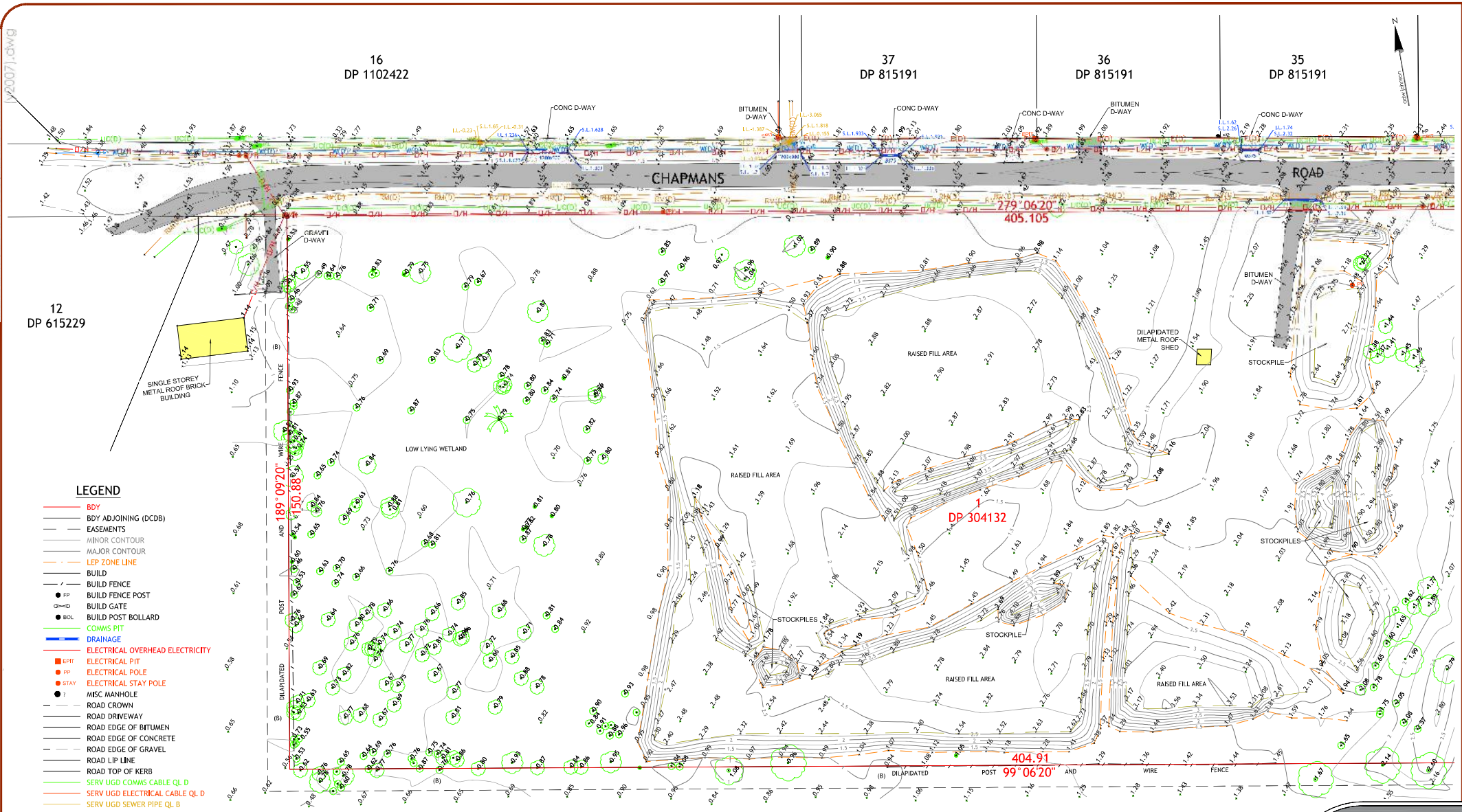
S:\190835\DWG\Survey\DET\190835-DET-001-A (v2007).dwg

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.



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ver.	date	comment	surveyed	drawn	checked	dir.
A	06.07.22	INITIAL ISSUE	K.R.	A.E.	B.W.J	D.B.

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ORIGIN OF CO-ORDINATES: S.S.M. 85979
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level information
DATUM: AHD
ORIGIN OF LEVELS: S.S.M. 85979
CONTOUR INTERVAL: 0.25m

scale (at original size)
0 12.5 25.0m
SCALE: 1:500 (FULL)

page
2 OF 3

GDA2020

REFER TO SHEET 1 FOR ALL RELEVANT SITE NOTES AND SERVICES CLASSIFICATIONS.

WARNING OPTICAL FIBRE IN AREA

WARNING UNDERGROUND ELECTRICITY LINES

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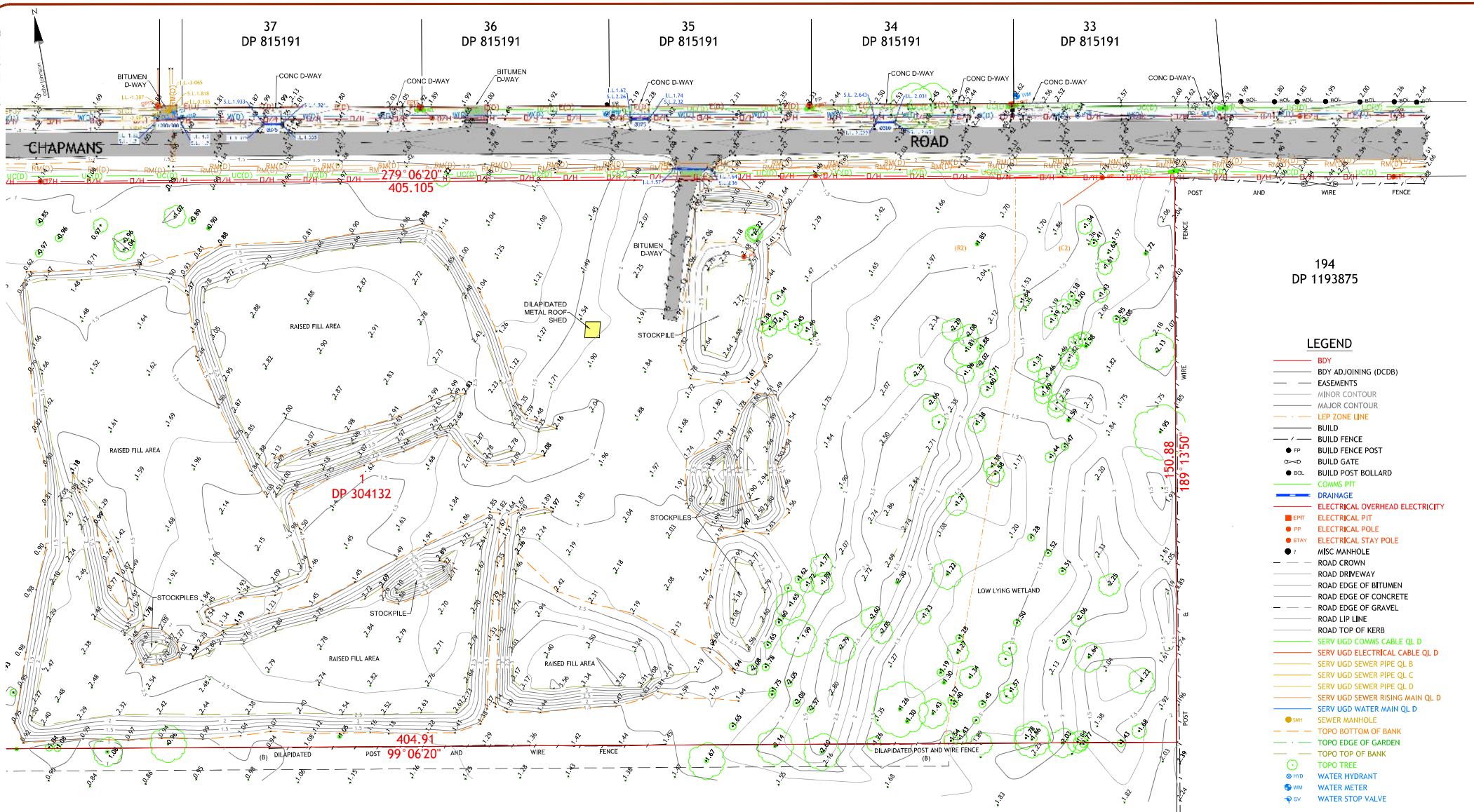

LEGEND

- BDY
- BDY ADJOINING (DCDB)
- EASEMENTS
- MINOR CONTOUR
- MAJOR CONTOUR
- LEP ZONE LINE
- BUILD
- BUILD FENCE
- FP BUILD FENCE POST
- BUILD GATE
- BOL BUILD POST BOLLARD
- COMMS PIT
- DRAINAGE
- ELECTRICAL OVERHEAD ELECTRICITY
- EPIT ELECTRICAL PIT
- PP ELECTRICAL POLE
- STAY ELECTRICAL STAY POLE
- MISC MANHOLE
- ROAD CROWN
- ROAD DRIVEWAY
- ROAD EDGE OF BITUMEN
- ROAD EDGE OF CONCRETE
- ROAD EDGE OF GRAVEL
- ROAD LIP LINE
- ROAD TOP OF KERB
- SERV UGD COMMS CABLE QL D
- SERV UGD ELECTRICAL CABLE QL D
- SERV UGD SEWER PIPE QL B
- SERV UGD SEWER PIPE QL C
- SERV UGD SEWER PIPE QL D
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ORIGIN OF LEVELS: S.S.M. 85979
CONTOUR INTERVAL: 0.25m

scale (at original size)
SCALE: 1:500 (FULL)

page 3 OF 3

GDA2020

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WARNING UNDERGROUND ELECTRICITY LINES
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190835-S2-CENG-001

CONCEPT ENGINEERING PLANS OF ' PROPOSED MANUFACTURED HOME ESTATE ' LOT 100, D.P. 1286524 & LOT 11, D.P.615229 40-80, 82 CHAPMANS ROAD, TUNCURRY

LOCALITY SKETCH
NOT TO SCALE

INDEX OF DRAWINGS

DRAWING No.	DRAWING NAME
190835-S2-CENG-001	COVER SHEET, LOCALITY SKETCH & INDEX OF DRAWINGS
190835-S2-CENG-002	OVERALL SITE PLAN
190835-S2-CENG-003	SITE DEMOLITION & TREE CLEARING PLAN
190835-S2-CENG-101	DETAIL PLAN - SHEET 1
190835-S2-CENG-102	DETAIL PLAN - SHEET 2
190835-S2-CENG-103	DETAIL PLAN - SHEET 3
190835-S2-CENG-104	DETAIL PLAN - SHEET 4
190835-S2-CENG-111	SITE ENTRY DETAIL PLAN
190835-S2-CENG-201	TYPICAL ROAD CROSS SECTIONS & DETAILS
190835-S2-CENG-211	ROAD LONGITUDINAL SECTION - CHAPMANS ROAD
190835-S2-CENG-212	ROAD LONGITUDINAL SECTION - ROAD No.1A & 1B
190835-S2-CENG-213	ROAD LONGITUDINAL SECTION - ROAD No.2
190835-S2-CENG-214	ROAD LONGITUDINAL SECTION - ROAD No.3
190835-S2-CENG-215	ROAD LONGITUDINAL SECTION - ROAD No.4
190835-S2-CENG-216	ROAD LONGITUDINAL SECTION - ROAD No.5
190835-S2-CENG-217	ROAD LONGITUDINAL SECTION - ROAD No.6
190835-S2-CENG-218	ROAD LONGITUDINAL SECTION - ROAD No.7
190835-S2-CENG-219	ROAD LONGITUDINAL SECTION - ROAD No.8 - SHEET 1
190835-S2-CENG-220	ROAD LONGITUDINAL SECTION - ROAD No.8 - SHEET 2
190835-S2-CENG-221	ROAD LONGITUDINAL SECTION - ROAD No.9
190835-S2-CENG-222	ROAD LONGITUDINAL SECTION - ROAD No.10A & 10B
190835-S2-CENG-223	ROAD LONGITUDINAL SECTION - ROAD No.11 & 12
190835-S2-CENG-301	VEHICLE SWEPT PATHS PLAN - SHEET 1
190835-S2-CENG-302	VEHICLE SWEPT PATHS PLAN - SHEET 2
190835-S2-CENG-303	VEHICLE SWEPT PATHS PLAN - SHEET 3
190835-S2-CENG-304	VEHICLE SWEPT PATHS PLAN - SHEET 4
190835-S2-CENG-401	STORMWATER LAYOUT PLAN
190835-S2-CENG-411	BASIN No.1 DETAIL PLAN
190835-S2-CENG-412	BASIN No.2 DETAIL PLAN
190835-S2-CENG-413	BASIN No.3 DETAIL PLAN
190835-S2-CENG-414	BASIN No.4 DETAIL PLAN
190835-S2-CENG-415	BASIN & RAINGARDEN TYPICAL SECTION

INDEX OF DRAWINGS

DRAWING No.	DRAWING NAME
190835-S2-CENG-501	SITE REGRADE PLAN
190835-S2-CENG-511	SITE REGRADE SECTIONS - SHEET 1
190835-S2-CENG-512	SITE REGRADE SECTIONS - SHEET 2
190835-S2-CENG-513	SITE REGRADE SECTIONS - SHEET 3
190835-S2-CENG-514	SITE REGRADE SECTIONS - SHEET 4
190835-S2-CENG-515	SITE REGRADE SECTIONS - SHEET 5
190835-S2-CENG-516	SITE REGRADE SECTIONS - SHEET 6
190835-S2-CENG-517	SITE REGRADE SECTIONS - SHEET 7
190835-S2-CENG-601	EROSION & SEDIMENT CONTROL PLAN
190835-S2-CENG-611	EROSION & SEDIMENT CONTROL DETAILS & NOTES
190835-S2-CENG-701	TRAFFIC MANAGEMENT PLAN - SHEET 1
190835-S2-CENG-702	TRAFFIC MANAGEMENT PLAN - SHEET 2
190835-S2-CENG-703	TRAFFIC MANAGEMENT PLAN - SHEET 3
190835-S2-CENG-704	TRAFFIC MANAGEMENT PLAN - SHEET 4
190835-S2-CENG-801	COMBINED SERVICES PLAN - SHEET 1
190835-S2-CENG-802	COMBINED SERVICES PLAN - SHEET 2
190835-S2-CENG-803	COMBINED SERVICES PLAN - SHEET 3
190835-S2-CENG-804	COMBINED SERVICES PLAN - SHEET 4

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

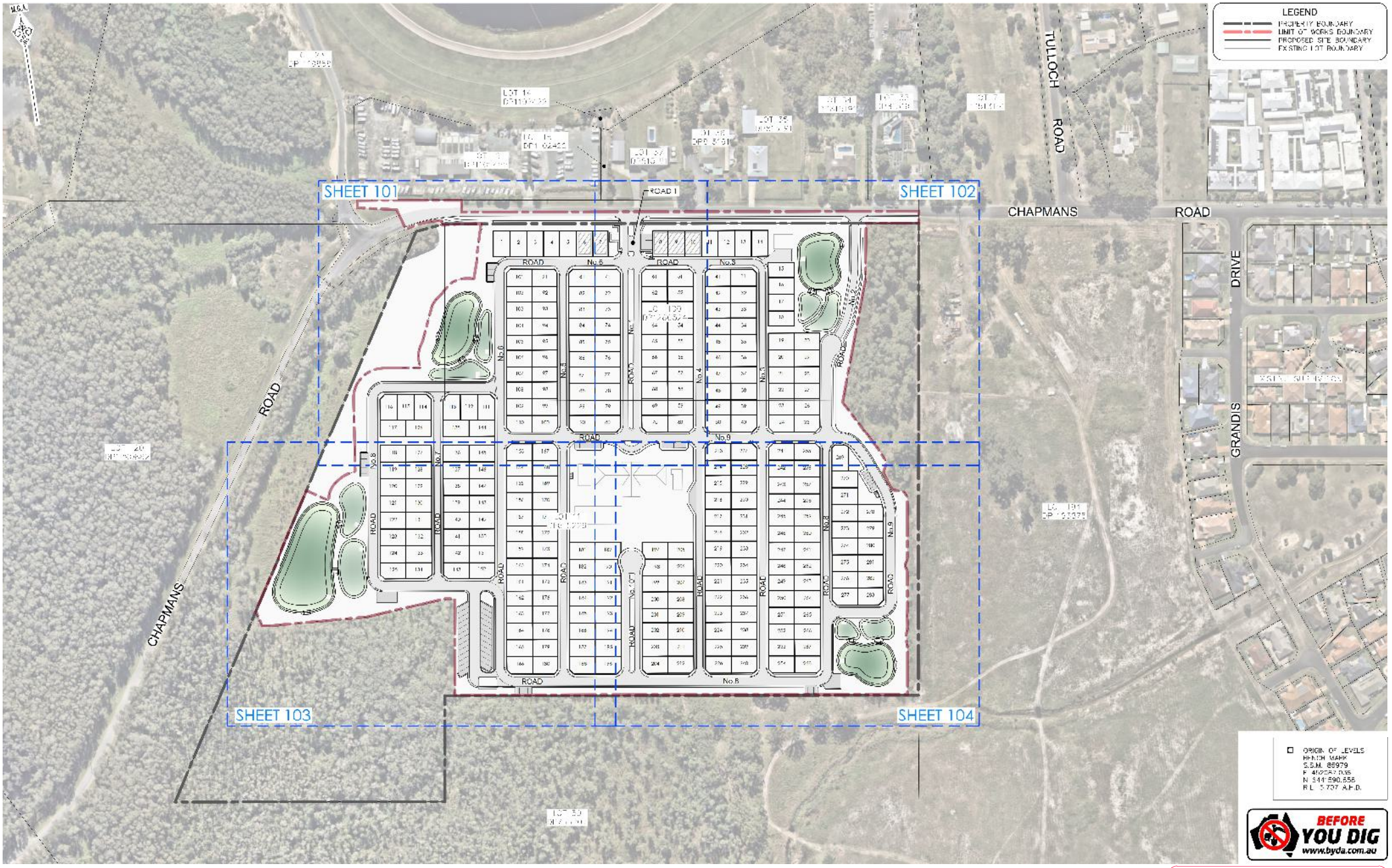
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: COVER SHEET, INDEX OF DRAWINGS & LOCALITY SKETCH

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	001	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:30:31PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-001.DWG

190835-S2-CENG-002



OVERALL PLAN
SCALE 1:1500

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:1500 (0, 30, 60, 75m) A3 1:3000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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5 Pioneer Avenue,
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Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
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TUNCURRY

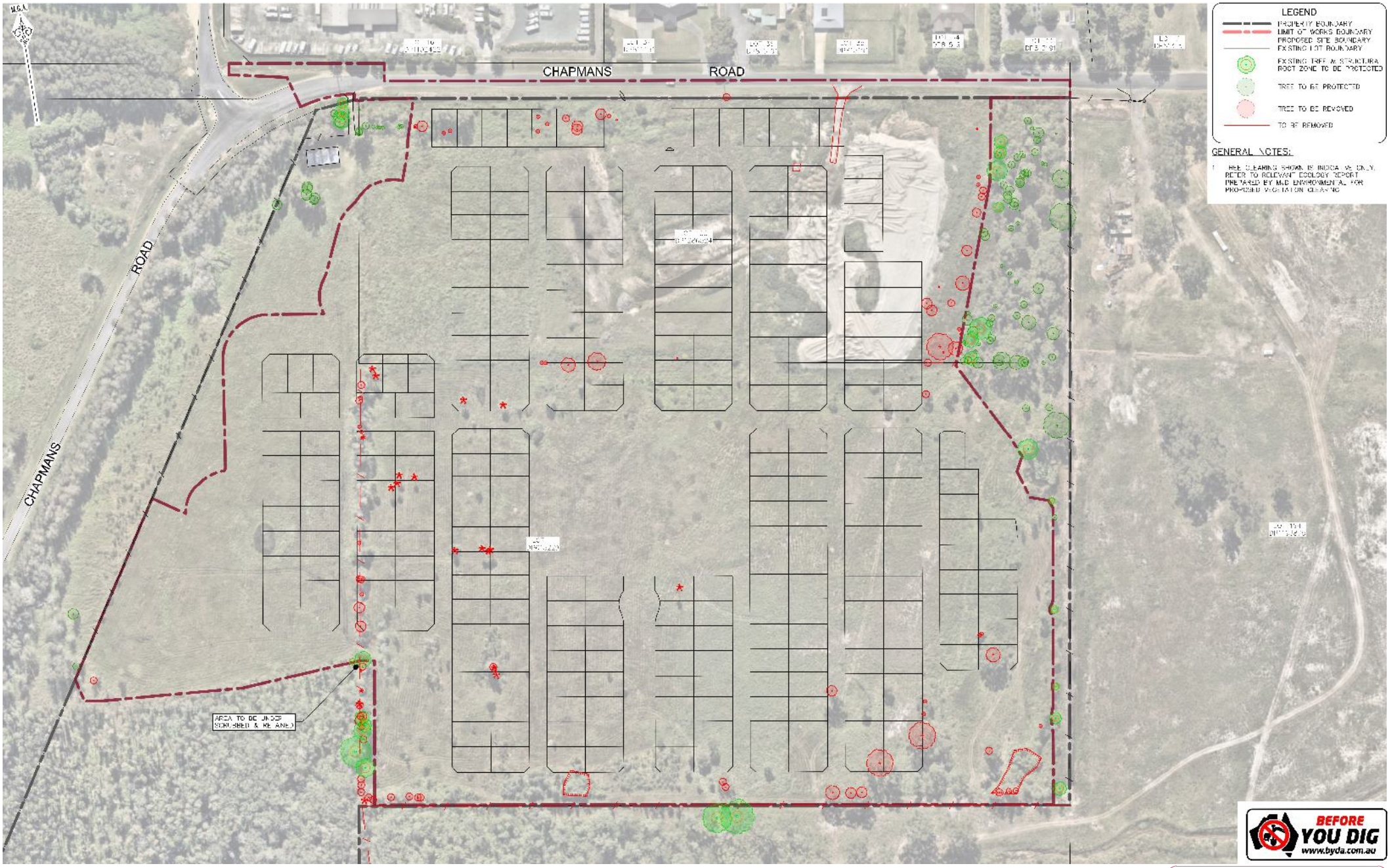
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: OVERALL SITE PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	002	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:30:41PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-002.DWG

190835-S2-CENG-003



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SITE DEMOLITION & TREE CLEARING PLAN

SCALE 1:1000

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:1000 — 0 25 50m — A3 1:2000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

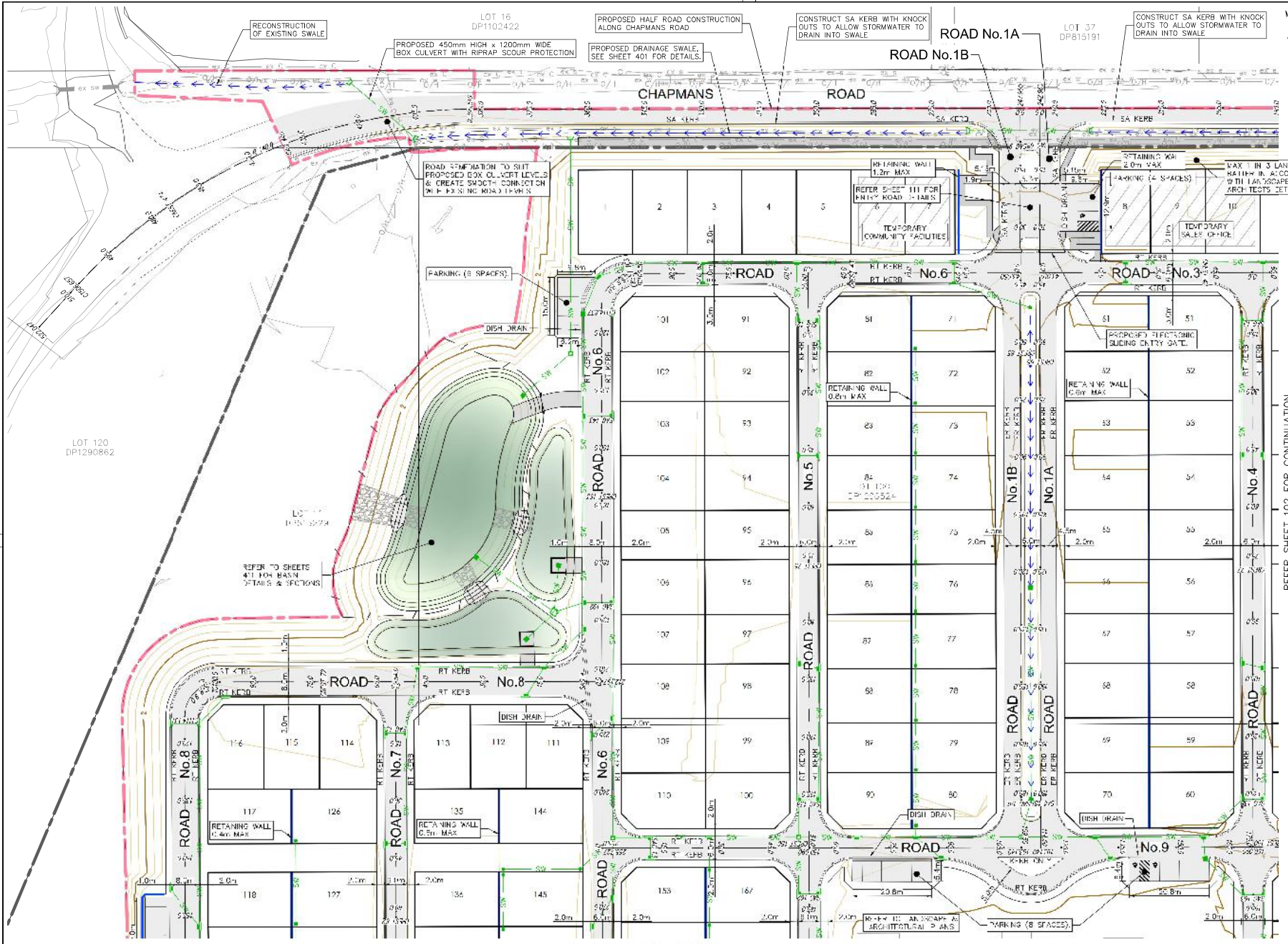
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: SITE DEMOLITION & TREE CLEARING PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	003	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:30:51PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-003.DWG

190835-S2-CENG-101-104



DETAIL PLAN

SCALE 1:500

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED SAWCUT
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- BASIN FENCE
- FENCE GATE
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

GENERAL NOTES:

1. FOR TYPICAL ROAD CROSS SECTIONS & TYPICAL CARPARK SIZING REFER SHEET 201.
2. CARPARKING TO BE IN ACCORDANCE WITH AS2890.
3. STORMWATER LAYOUT IS INDICATIVE ONLY.

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, A3 1:1000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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SURVEYED: ADW Johnson

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PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: DETAIL PLAN
SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	101	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:01PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-101-104.DWG

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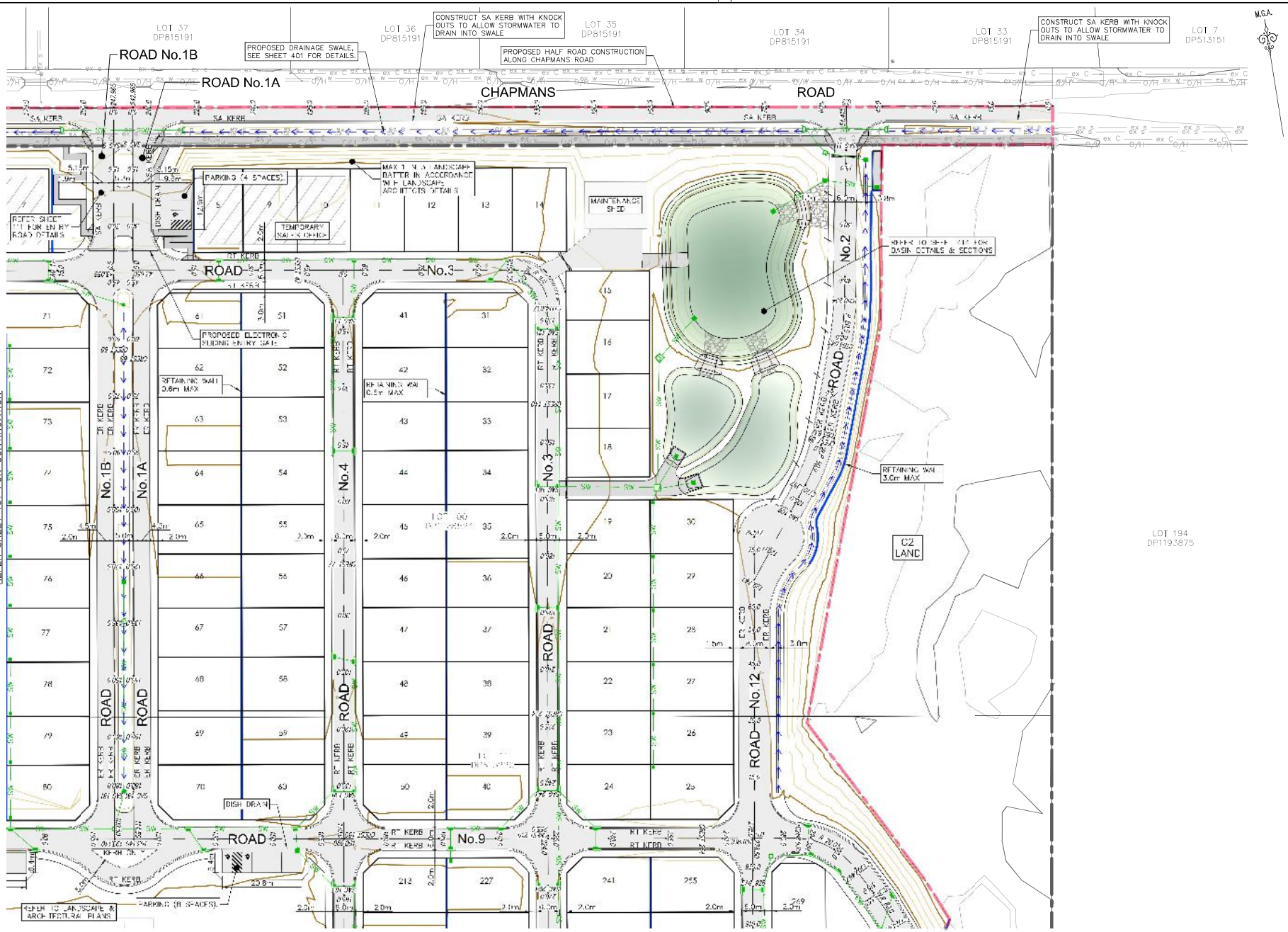

REFER SHEET 101 FOR CONTINUATION

REFER SHEET 104 FOR CONTINUATION

DETAIL PLAN

SCALE 1:500

M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED SAWCUT
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- BASIN FENCE
- FENCE GATE
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

GENERAL NOTES:

1. FOR TYPICAL ROAD CROSS SECTIONS & TYPICAL CARPARK SIZING REFER SHEET 201.
2. CARPARKING TO BE IN ACCORDANCE WITH AS2890.
3. STORMWATER LAYOUT IS INDICATIVE ONLY.

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, A3 1:1000 (0, 12.5, 25.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
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Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: DETAIL PLAN
SHEET 2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	102	A

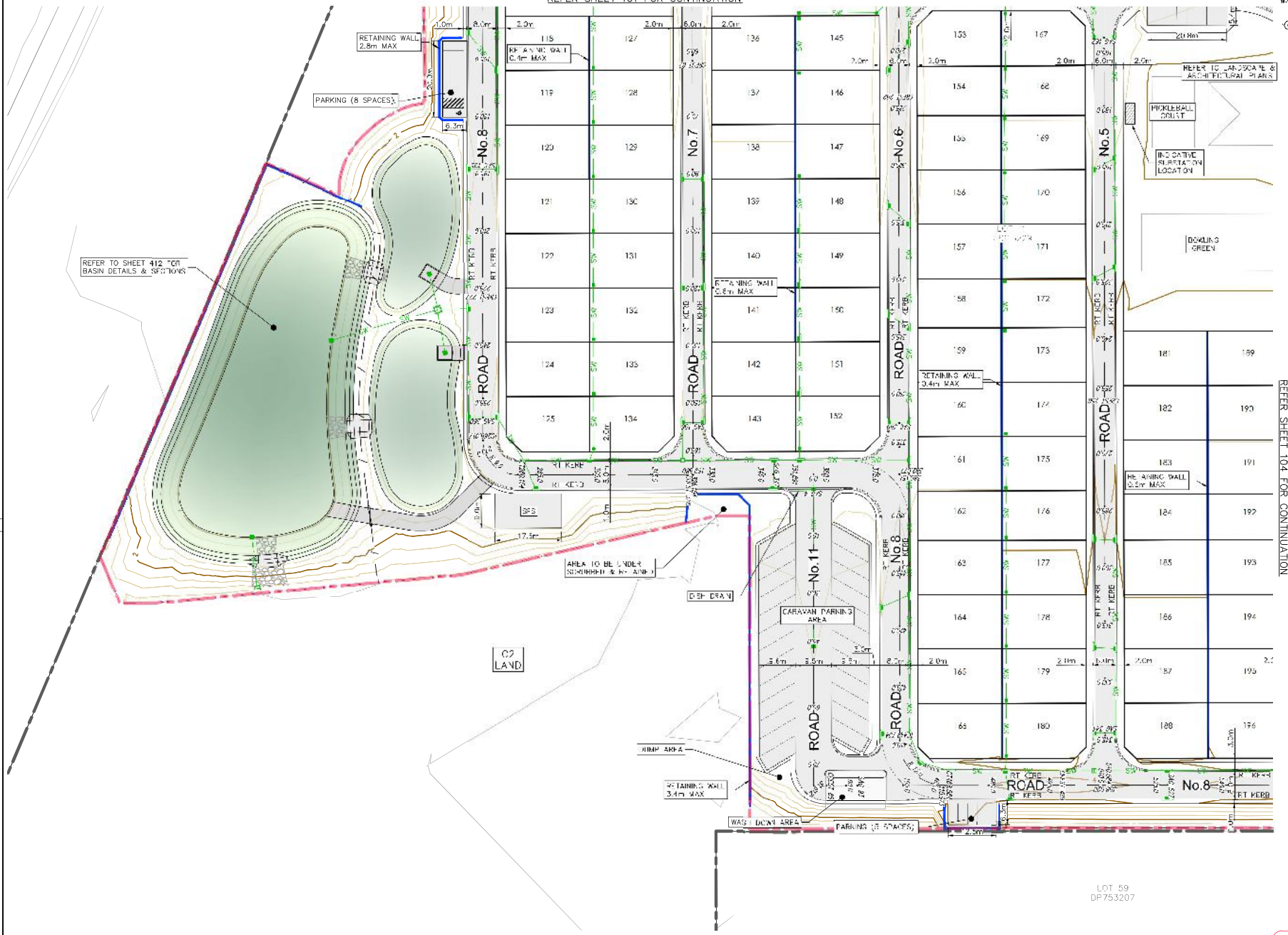
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:04PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-101-104.DWG

100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190835-S2-CENG-101-104

REFER SHEET 101 FOR CONTINUATION



M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED SAWCUT
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- BASIN FENCE
- FENCE GATE
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- SW PROPOSED STORMWATER
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- C EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

GENERAL NOTES:

1. FOR TYPICAL ROAD CROSS SECTIONS & TYPICAL CARPARK SIZING REFER SHEET 201.
2. CARPARKING TO BE IN ACCORDANCE WITH AS2890.
3. STORMWATER LAYOUT IS INDICATIVE ONLY.

DETAIL PLAN

SCALE 1:500

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SCALES: A1 1:500 — 0 12.5 25.0m — A3 1:1000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: DETAIL PLAN
SHEET 3

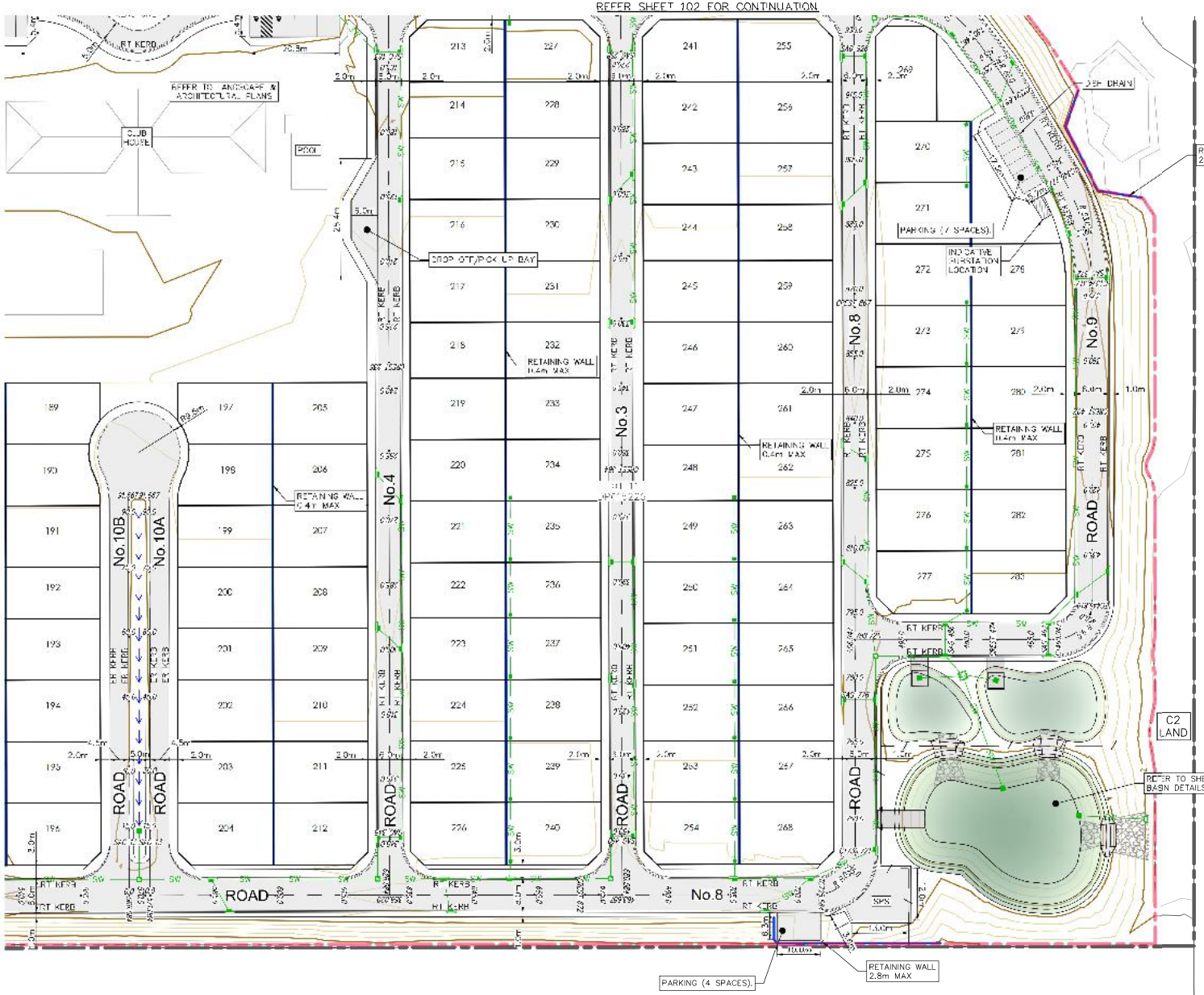
PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	103	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:07PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-101-104.DWG

190835-S2-CENG-101-104

REFER SHEET 102 FOR CONTINUATION

REFER SHEET 103 FOR CONTINUATION



DETAIL PLAN

SCALE 1:500

M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
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- EXISTING KERB
- EXTENTS OF BATTER
- BASIN FENCE
- FENCE GATE
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- SW PROPOSED STORMWATER
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- C EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

GENERAL NOTES:

1. FOR TYPICAL ROAD CROSS SECTIONS & TYPICAL CARPARK SIZING REFER SHEET 201.
2. CARPARKING TO BE IN ACCORDANCE WITH AS2890.
3. STORMWATER LAYOUT IS INDICATIVE ONLY.

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, A3 1:1000 (0, 12.5, 25.0m)

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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

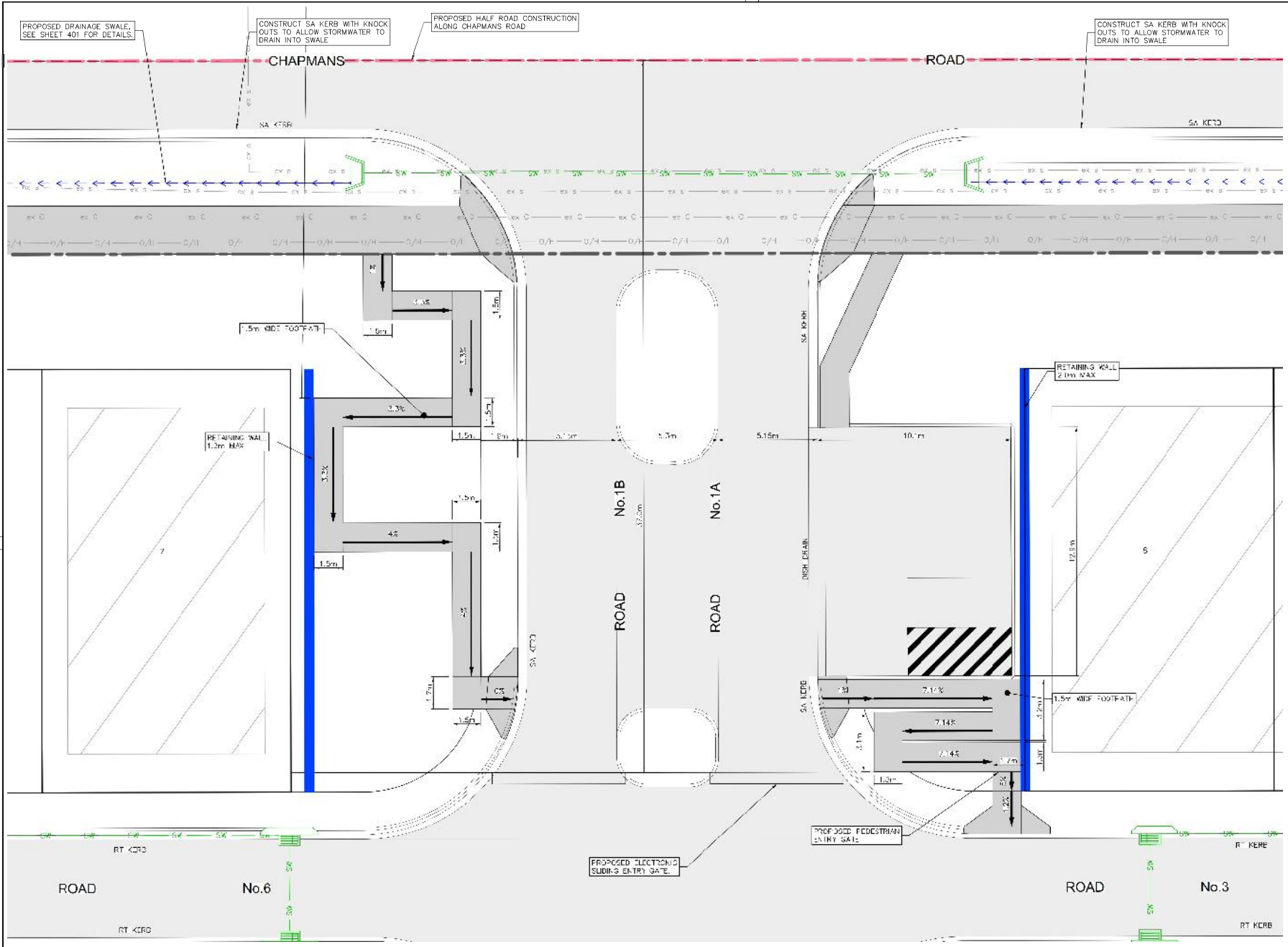
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: DETAIL PLAN
SHEET 4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	104	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:10PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-101-104.DWG

190835-S2-CENG-111



M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED SAWCUT
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- PROPOSED OVERLAND FLOW PATH
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

GENERAL NOTES:

1. FOR TYPICAL ROAD CROSS SECTIONS & TYPICAL CARPARK SIZING REFER SHEET 201.
2. CARPARKING TO BE IN ACCORDANCE WITH AS2890.
3. STORMWATER LAYOUT IS INDICATIVE ONLY.

SITE ENTRY DETAIL PLAN

SCALE 1:500

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, 0, 12.5, 25.0m, A3 1:1000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

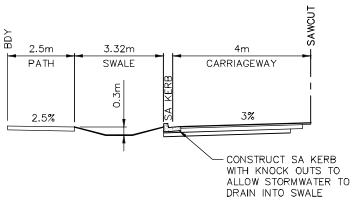
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: SITE ENTRY DETAIL PLAN

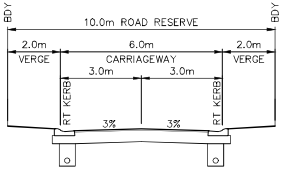
PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	111	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:17PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-111.DWG

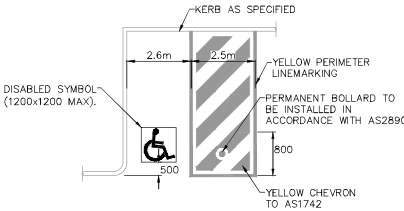
190835-S2-CENG-201



TYPICAL SECTION – CHAPMANS ROAD
HALF ROAD CONSTRUCTION
SCALE 1:100



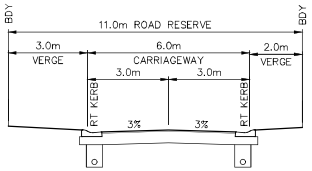
TYPICAL SECTION
PART ROAD No.3, PART ROAD No.4, PART ROAD No.5, PART ROAD No.6, PART ROAD No.7, PART ROAD No.8 & PART ROAD No.9
SCALE 1:100



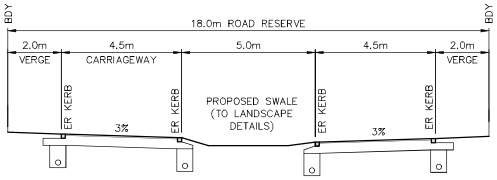
ACCESSIBLE PARKING DETAIL
N.T.S.

NOTE:

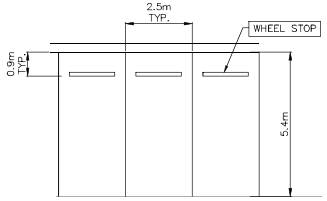
ADDITIONAL DISABLED SPACES TO BE LINE MARKED IN YELLOW PAINT.



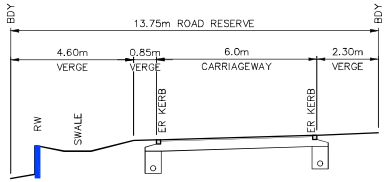
TYPICAL SECTION
PART ROAD No.3 & ROAD No.6
SCALE 1:100



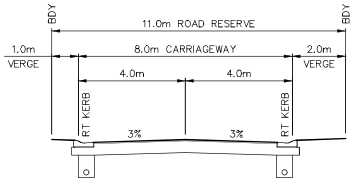
TYPICAL SECTION
ROAD No.1A, ROAD No.1B, ROAD No.10A & ROAD No.10B
SCALE 1:100



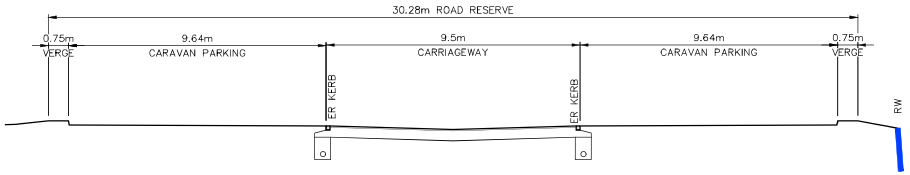
TYPICAL CARPARK DETAIL
SCALE 1:100



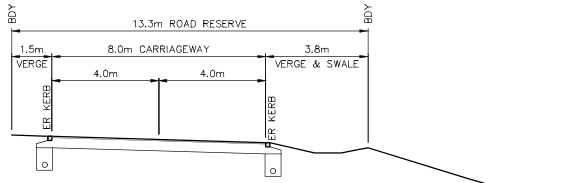
TYPICAL SECTION
ROAD No.2
SCALE 1:100



TYPICAL SECTION
PART ROAD No.6, PART ROAD No.8 & PART ROAD No.9
SCALE 1:100



TYPICAL SECTION
ROAD No.11
SCALE 1:100



TYPICAL SECTION
ROAD No.12
SCALE 1:100

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SCALES: A1 1:100 — 0 — 2.5 — 5.0m — A3 1:200

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CLIENT: ALLAM PROPERTY GROUP

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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

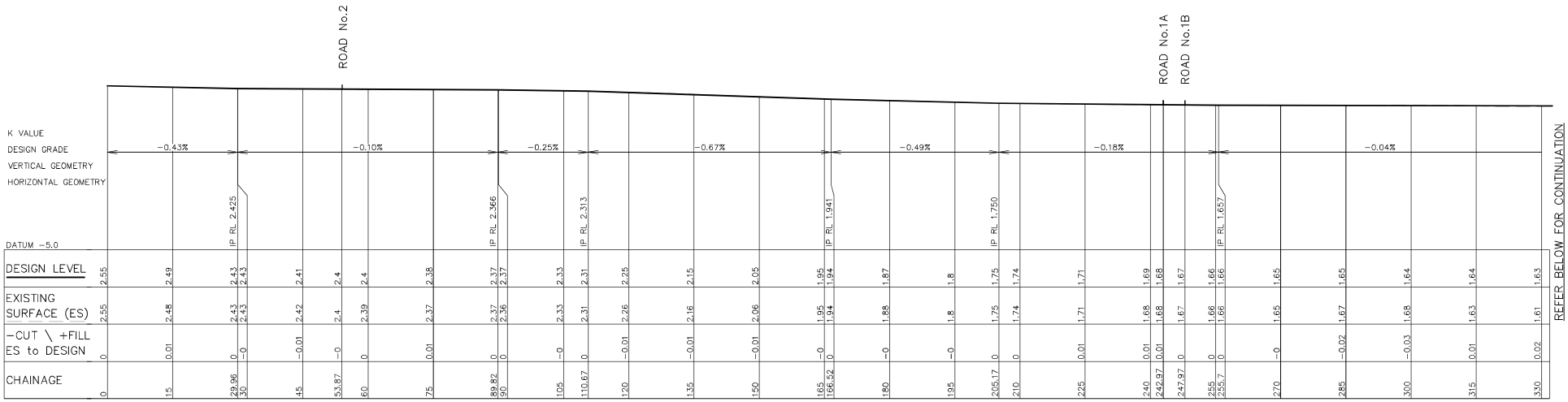
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: TYPICAL ROAD CROSS SECTIONS & DETAILS

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	201	A

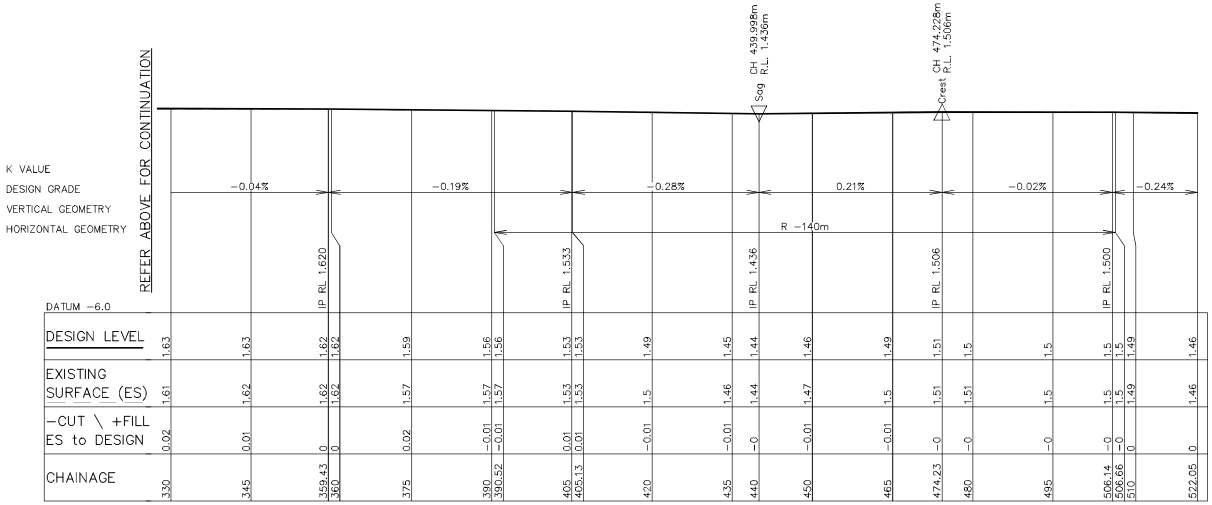
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:21PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-201.DWG

190835-S2-CENG-211



LONGITUDINAL SECTION – CHAPMANS ROAD (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – CHAPMANS ROAD (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

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40-80, 82 CHAPMANS ROAD
TUNCURRY

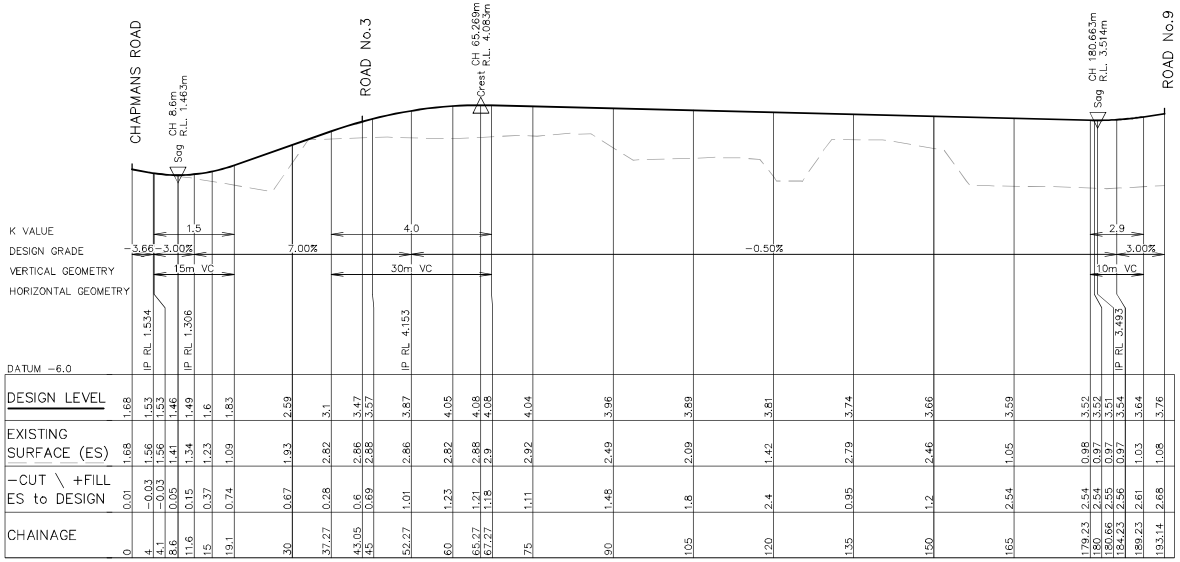
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS CHAPMANS ROAD

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	211	A

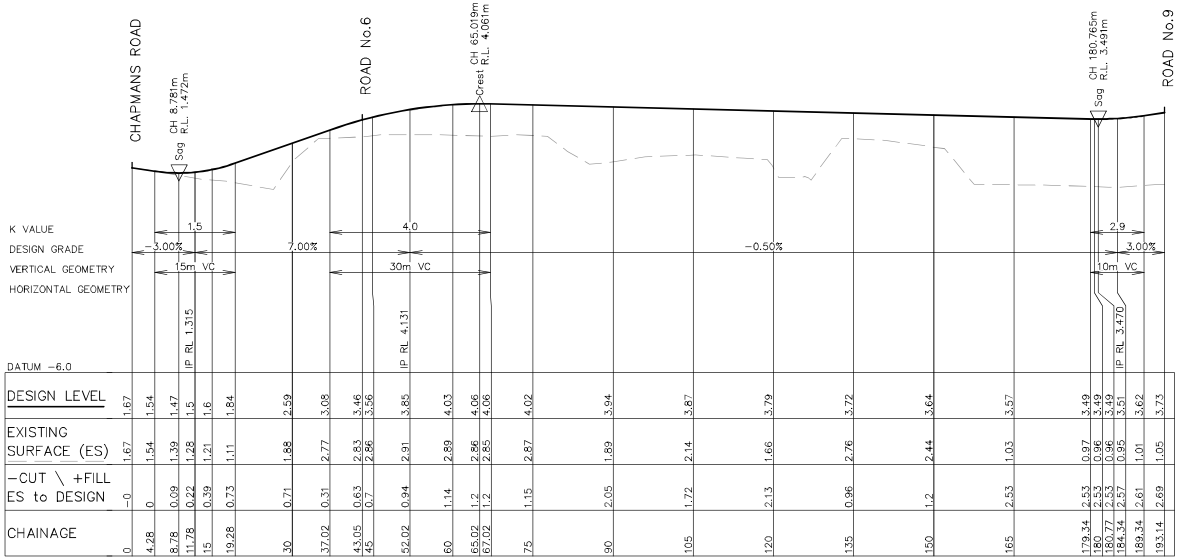
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:26PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-211.DWG

190835-S2-CENG-212



LONGITUDINAL SECTION – ROAD No.1A

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.1B

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

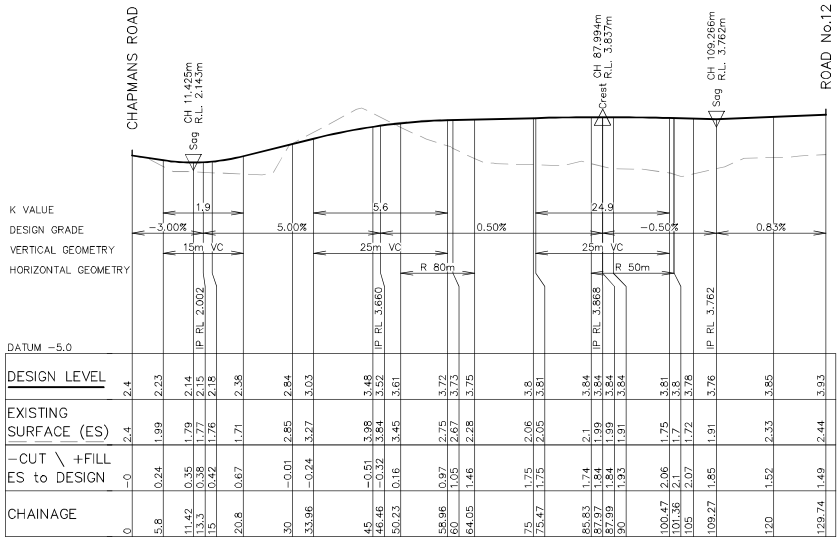
PROJECT
PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE
ROAD LONGITUDINAL SECTIONS
ROAD No.1A & 1B

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	212	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:31PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-212.DWG

190835-S2-CENG-213



LONGITUDINAL SECTION – ROAD No.2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 / A3 1:1000 (0, 12.5, 25.0m)
A1 1:100 / A3 1:200 (0, 2.5, 5.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

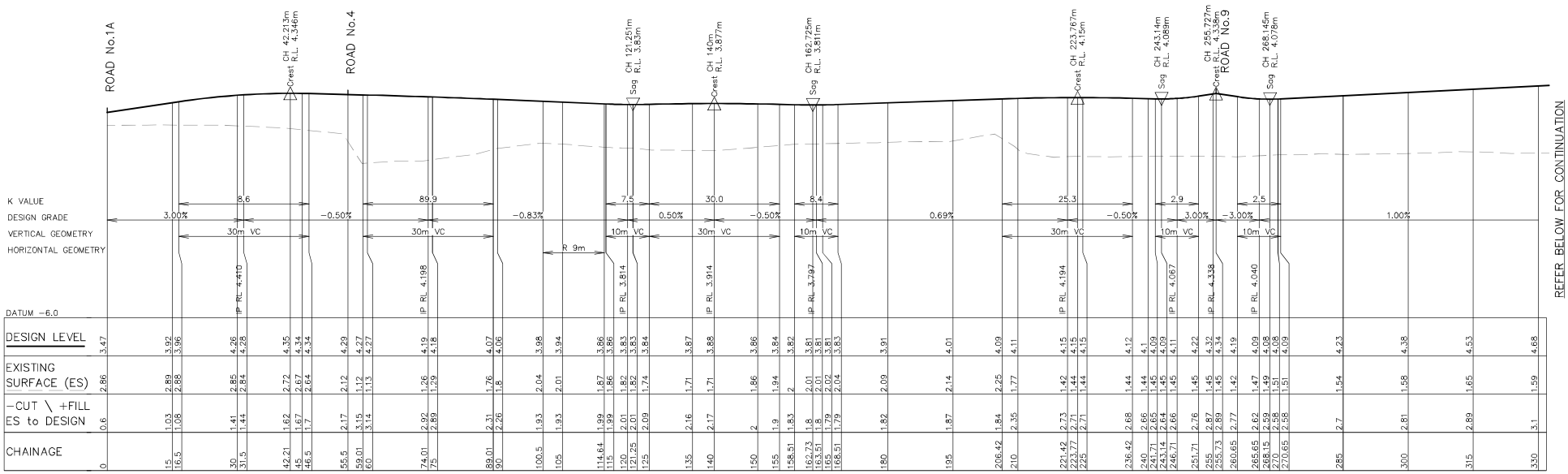
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS ROAD No.2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	213	A

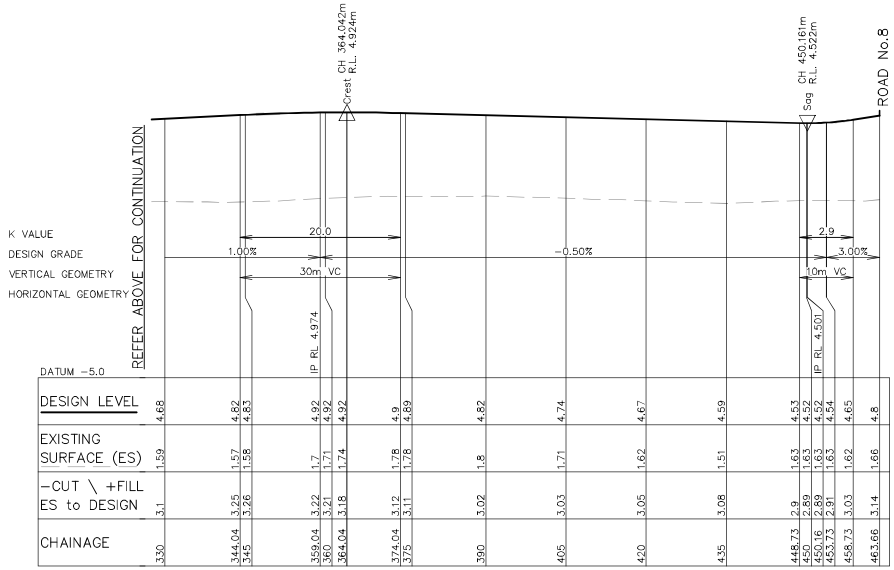
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:36PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-213.DWG

190835-S2-CENG-214



LONGITUDINAL SECTION – ROAD No.3 (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.3 (PART 2)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
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ABN 62 129 445 398

CLIENT
ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

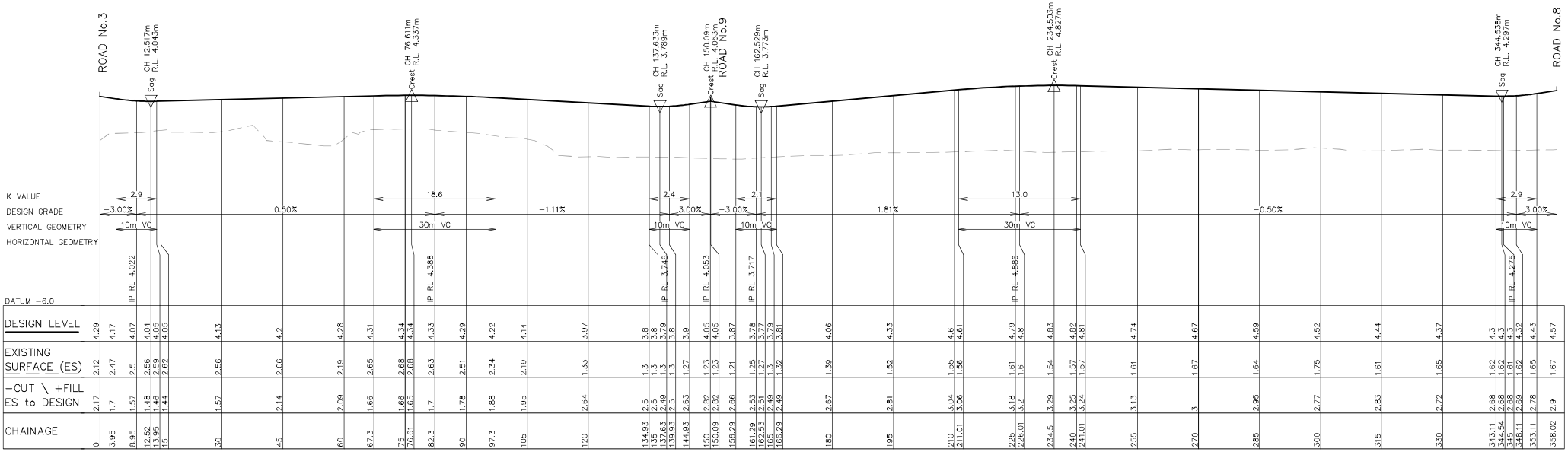
PROJECT
PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE
ROAD LONGITUDINAL SECTIONS
ROAD No.3

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	214	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:41PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-214.DWG

190835-S2-CENG-215



LONGITUDINAL SECTION – ROAD No.4

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 / A3 1:1000 — 0, 12.5, 25.0m
A1 1:100 / A3 1:200 — 0, 2.5, 5.0m

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson
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CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

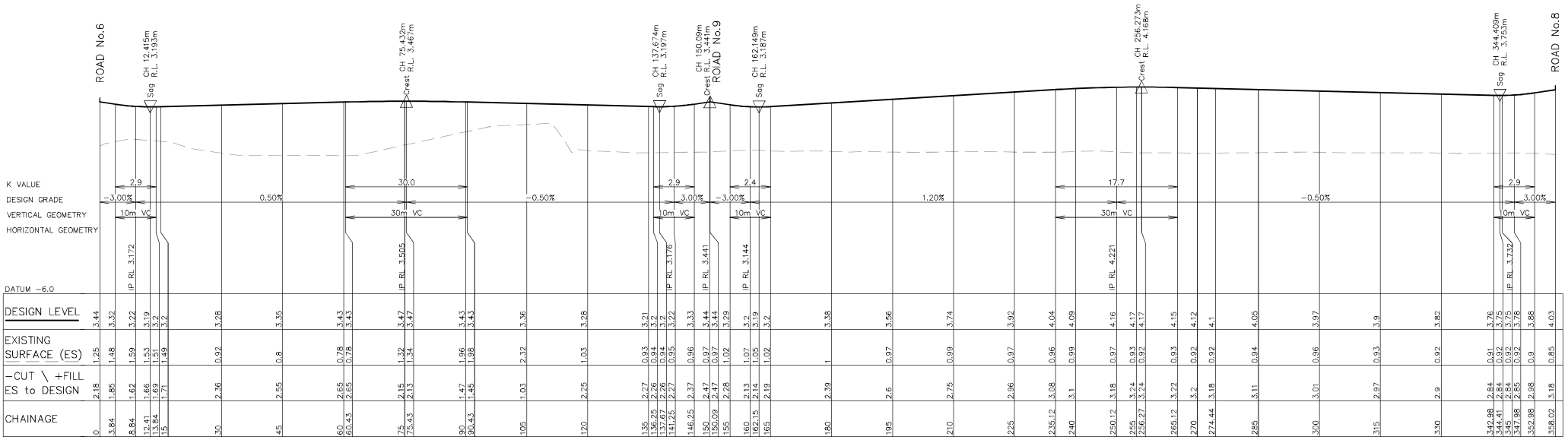
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS ROAD No.4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	215	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:46PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-215.DWG

190835-S2-CENG-216



LONGITUDINAL SECTION – ROAD No.5

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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CLIENT
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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

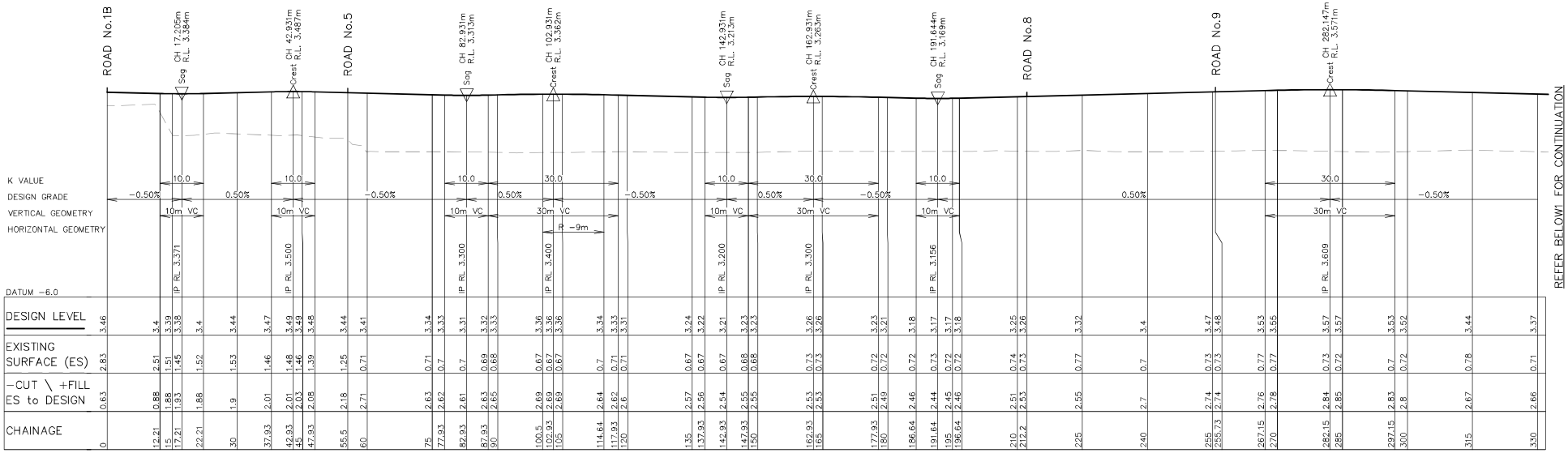
PROJECT
PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE
ROAD LONGITUDINAL SECTIONS
ROAD No.5

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	216	A

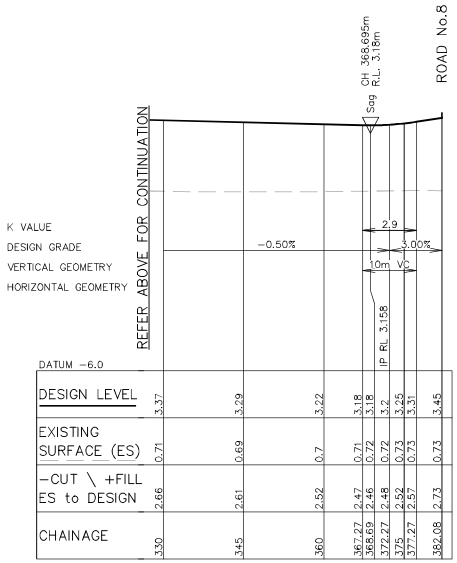
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:50PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-216.DWG

190835-S2-CENG-217



LONGITUDINAL SECTION – ROAD No.6 (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.6 (PART 2)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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TUNCURRY

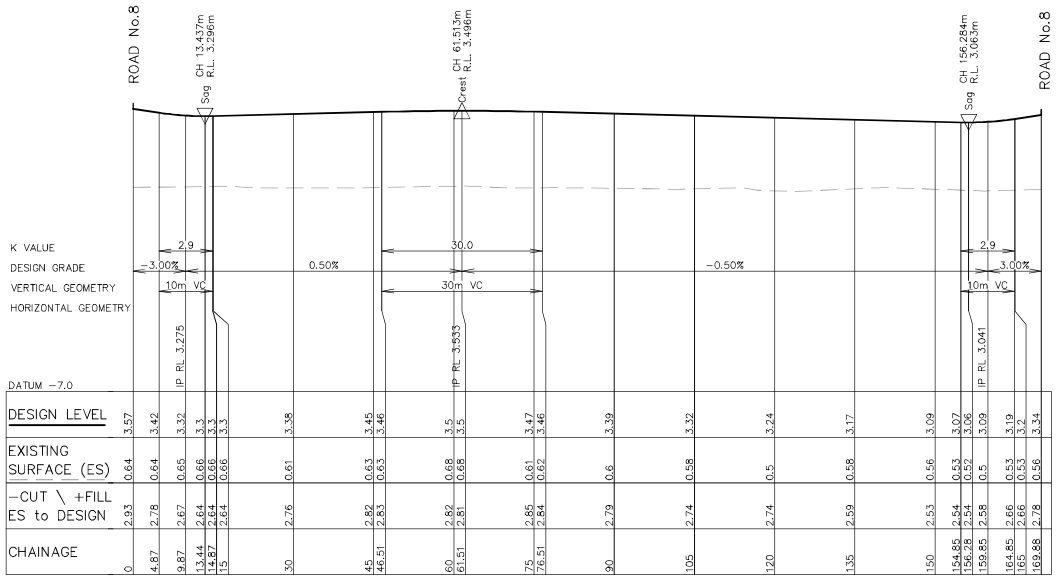
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS ROAD No.6

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	217	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:31:55PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-217.DWG

190835-S2-CENG-218



LONGITUDINAL SECTION – ROAD No.7

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 / A3 1:1000 (0, 12.5, 25.0m)
A1 1:100 / A3 1:200 (0, 2.5, 5.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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Central Coast
5 Pioneer Avenue,
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CLIENT: ALLAM PROPERTY GROUP

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40-80, 82 CHAPMANS ROAD
TUNCURRY

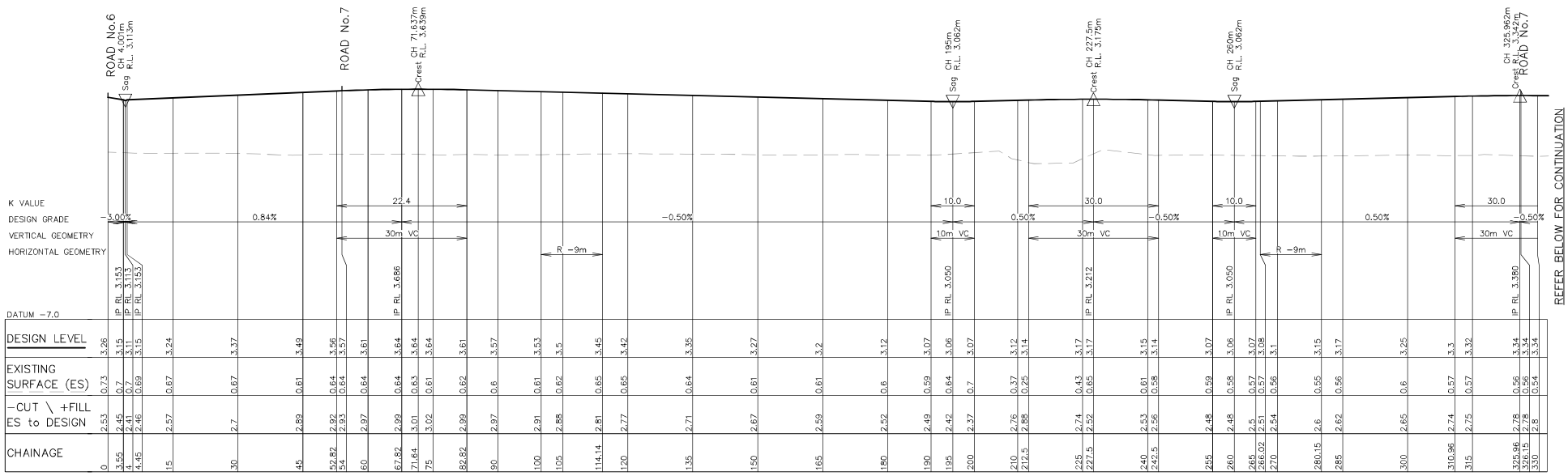
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS ROAD No.7

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	218	A

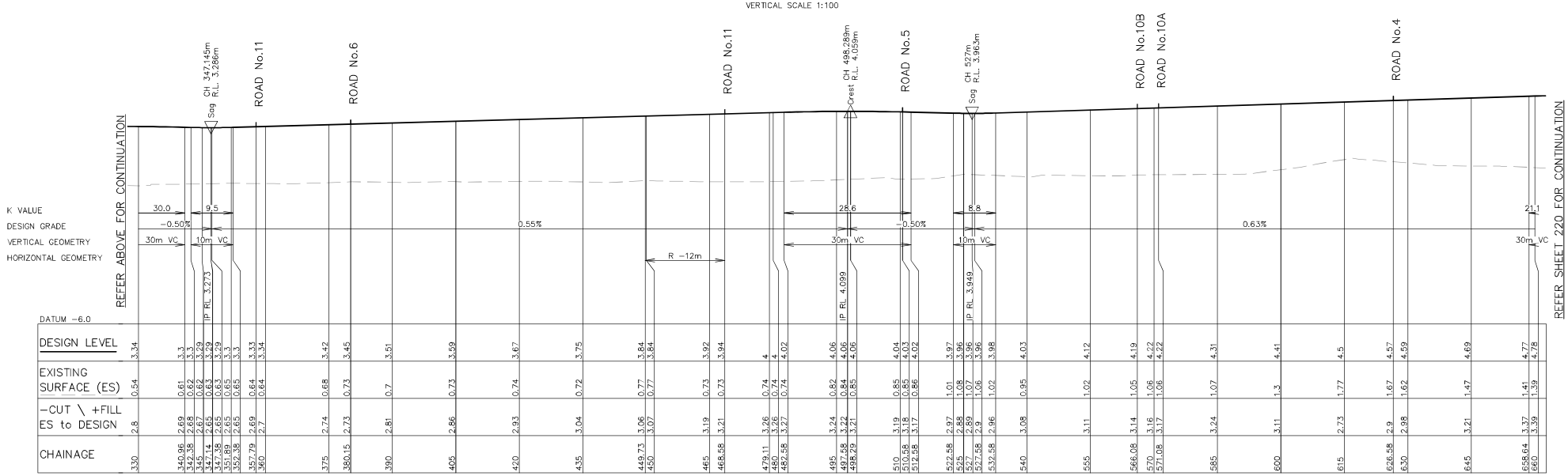
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:00PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-218.DWG

190835-S2-CENG-219



LONGITUDINAL SECTION – ROAD No.8 (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.8 (PART 2)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

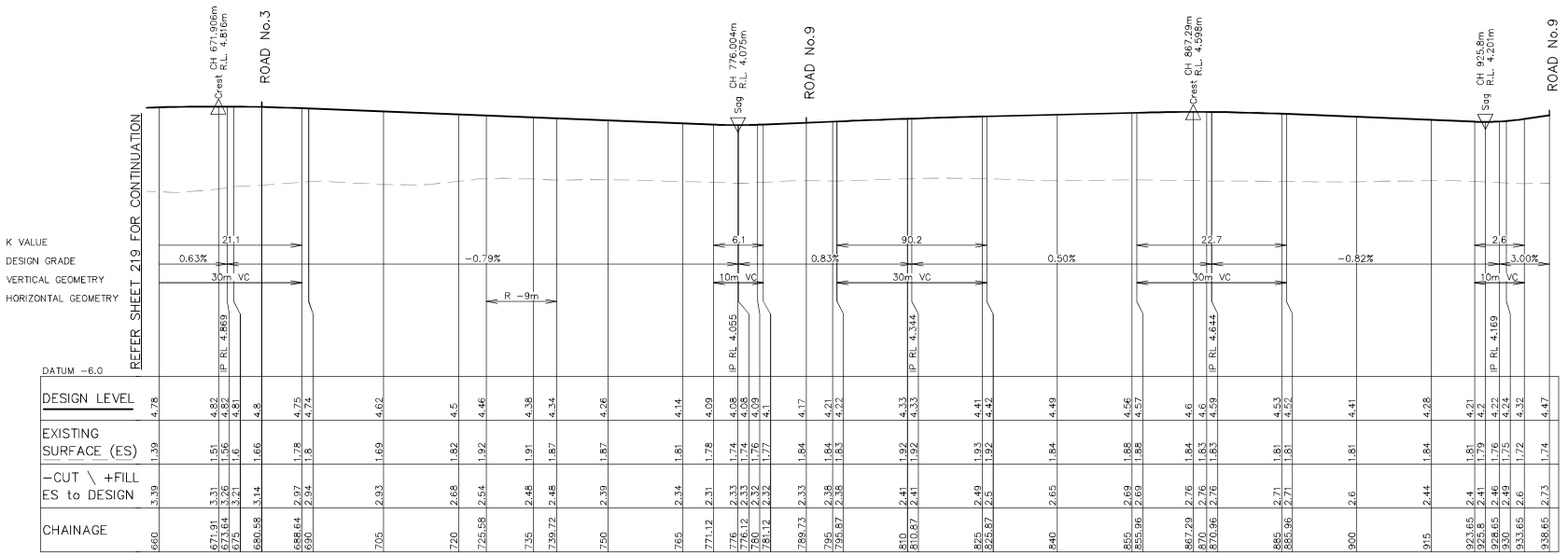
PROJECT
PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE
ROAD LONGITUDINAL SECTIONS
ROAD No.8
SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	219	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:05PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-219.DWG

190835-S2-CENG-220



LONGITUDINAL SECTION – ROAD No.8 (PART 3)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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adw Johnson
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40-80, 82 CHAPMANS ROAD
TUNCURRY

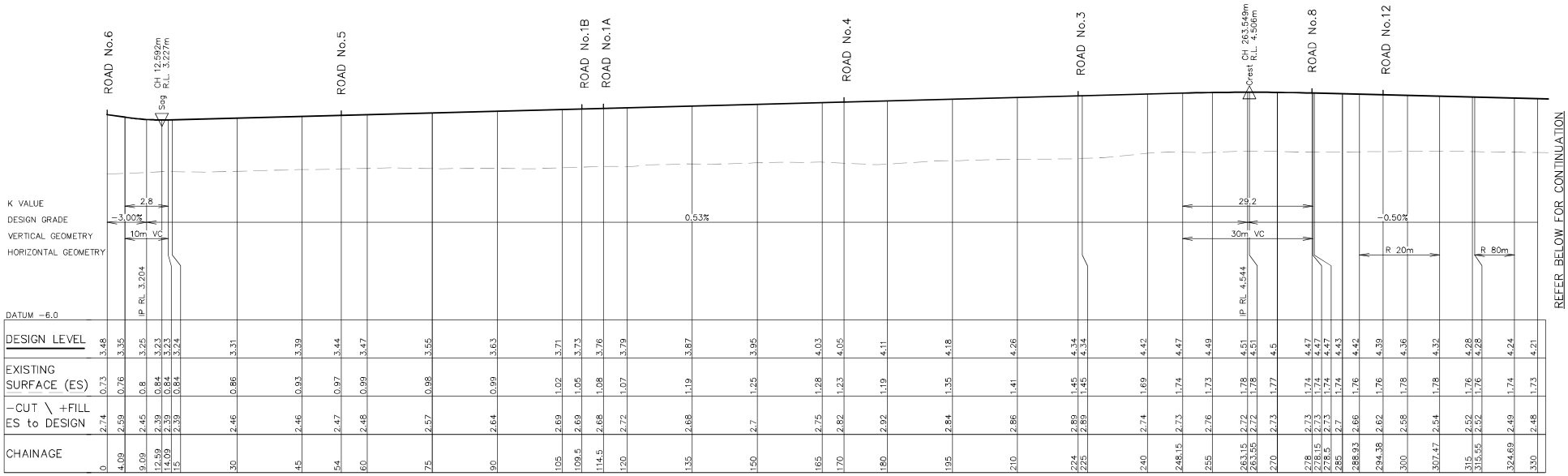
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS
ROAD No.8
SHEET 2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	220	A

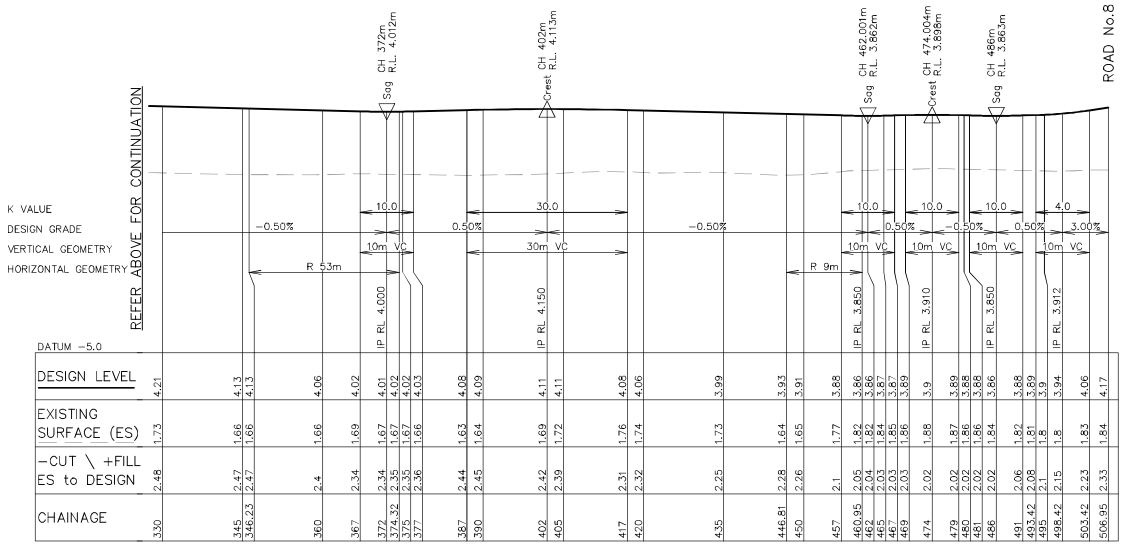
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:10PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-220.DWG

190835-S2-CENG-221



LONGITUDINAL SECTION – ROAD No.9 (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.9 (PART 2)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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CLIENT
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TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

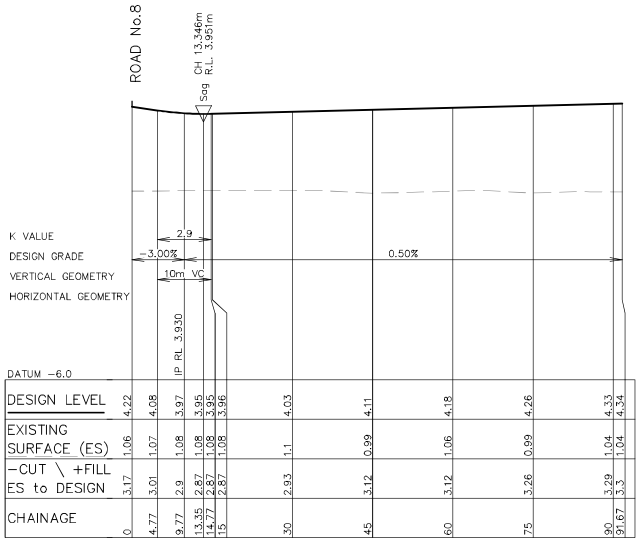
PROJECT
PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE
ROAD LONGITUDINAL SECTIONS
ROAD No.9

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	221	A

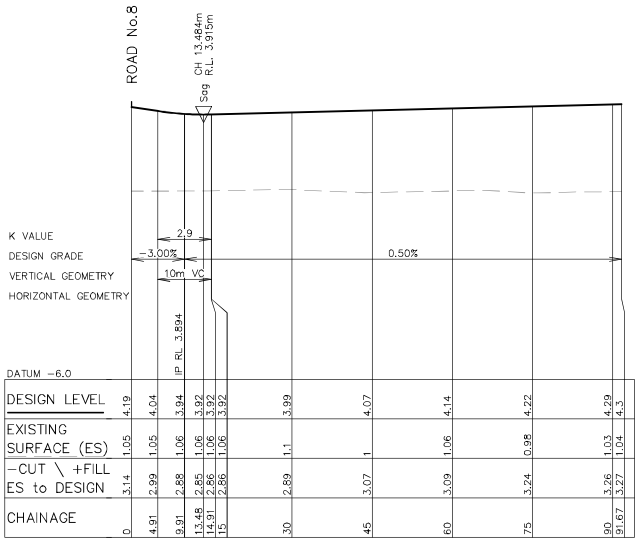
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:15PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-221.DWG

190835-S2-CENG-222



LONGITUDINAL SECTION – ROAD No.10A (PART 1)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.10A (PART 2)

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

100mm AT FULL SIZE

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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40-80, 82 CHAPMANS ROAD
TUNCURRY

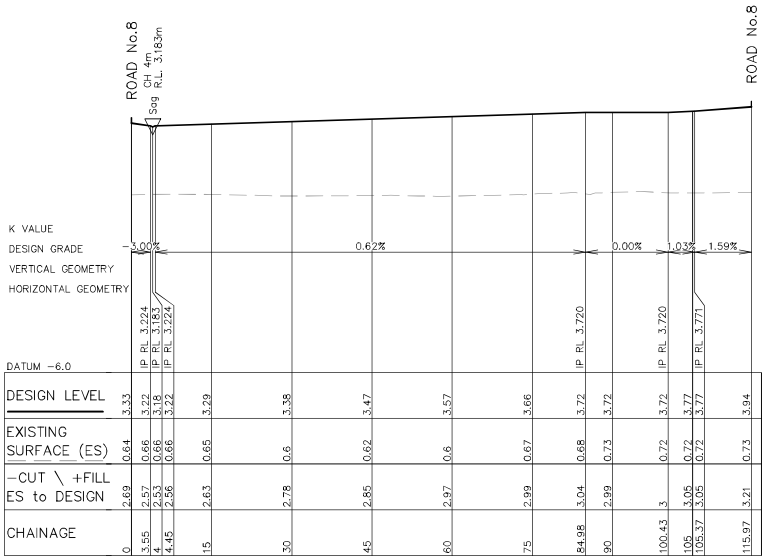
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS
ROAD No.10A & 10B

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	222	A

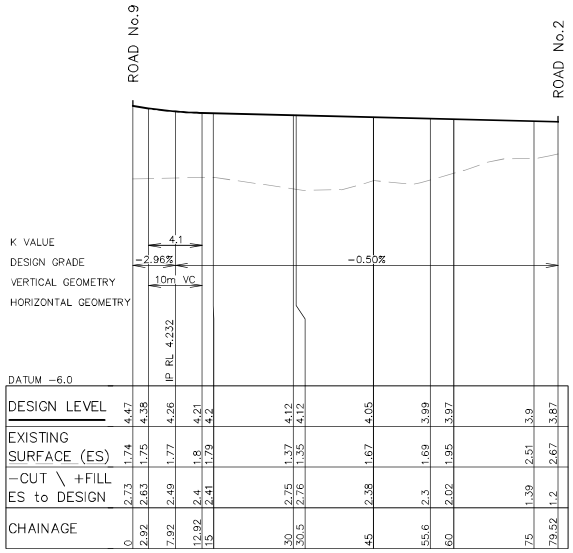
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:20PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-222.DWG

190835-S2-CENG-223



LONGITUDINAL SECTION – ROAD No.11

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION – ROAD No.12

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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TUNCURRY

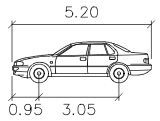
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: ROAD LONGITUDINAL SECTIONS ROAD No.11 & 12

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	223	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:25PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-223.DWG

190835-S2-CENG-301-304

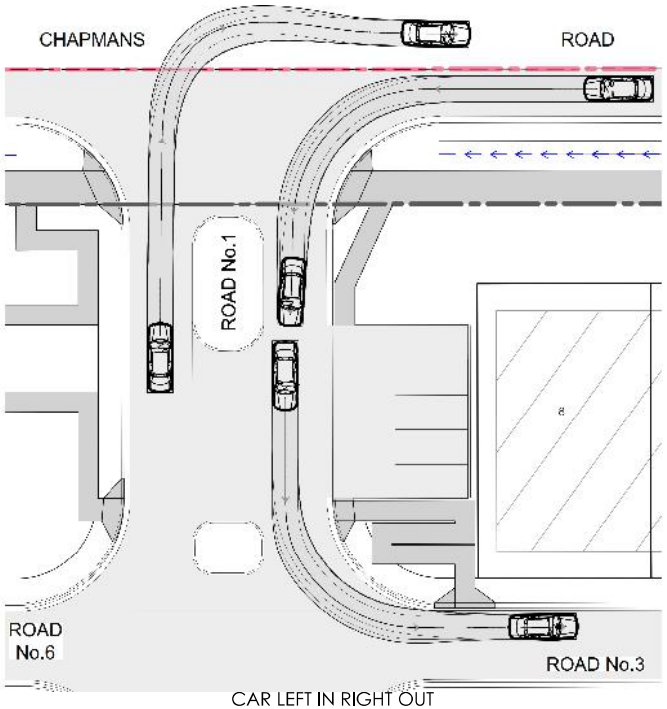


B99 PASSENGER–CAR

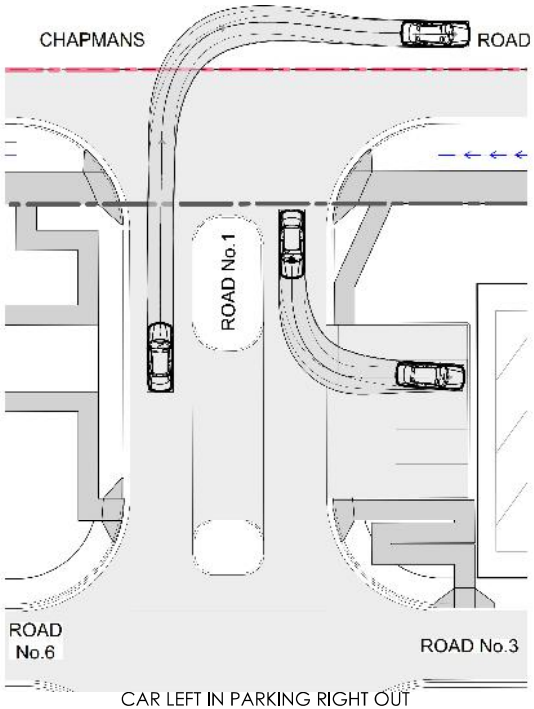
	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6

M.G.A.

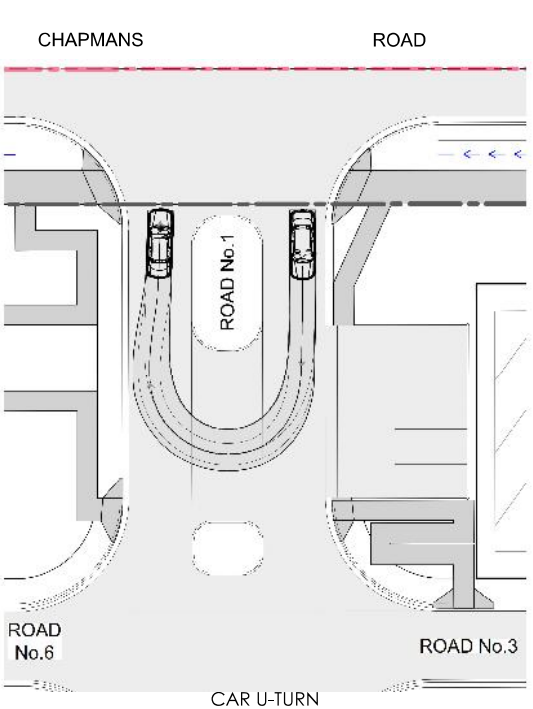
LEGEND
- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB



CAR LEFT IN RIGHT OUT
SCALE 1:200



CAR LEFT IN PARKING RIGHT OUT
SCALE 1:200



CAR U-TURN
SCALE 1:200

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 — 0 5.0 10.0m — A3 1:400

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

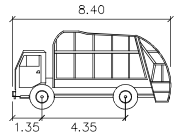
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: VEHICLE SWEPT PATH PLAN
SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	301	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:33PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-301-304.DWG

190835-S2-CENG-301-304

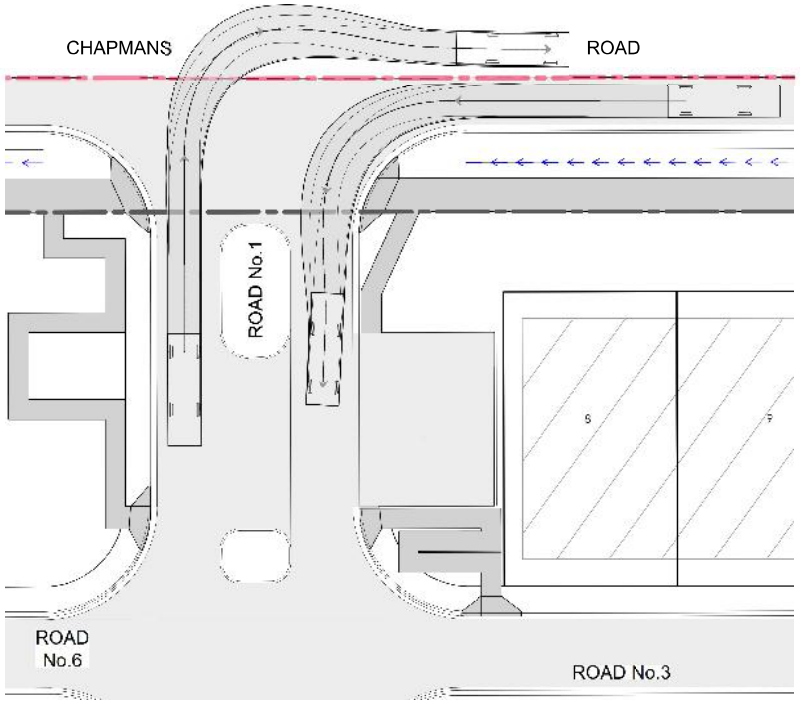


8.4m Garbage truck

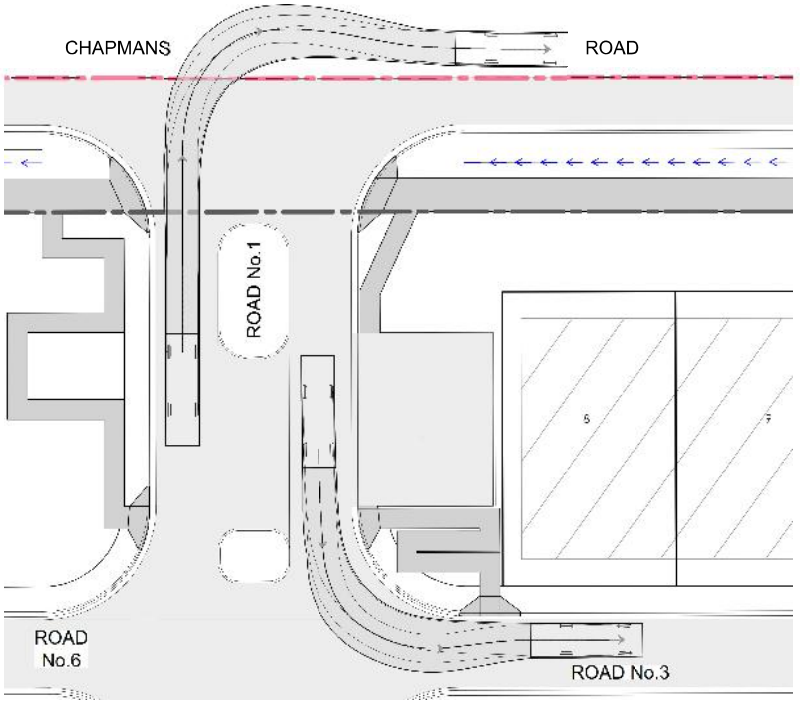
	meters
Width	: 2.50
Track	: 2.30
Lock to Lock Time	: 6.0
Steering Angle	: 36.0

M.G.A.

LEGEND
- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB



GARBAGE TRUCK LEFT IN RIGHT OUT
SCALE 1:200



GARBAGE TRUCK LEFT IN RIGHT OUT
SCALE 1:200

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 / A3 1:400 (0, 5.0, 10.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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adw Johnson
Central Coast
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Tuggerah N.S.W. 2259
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www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

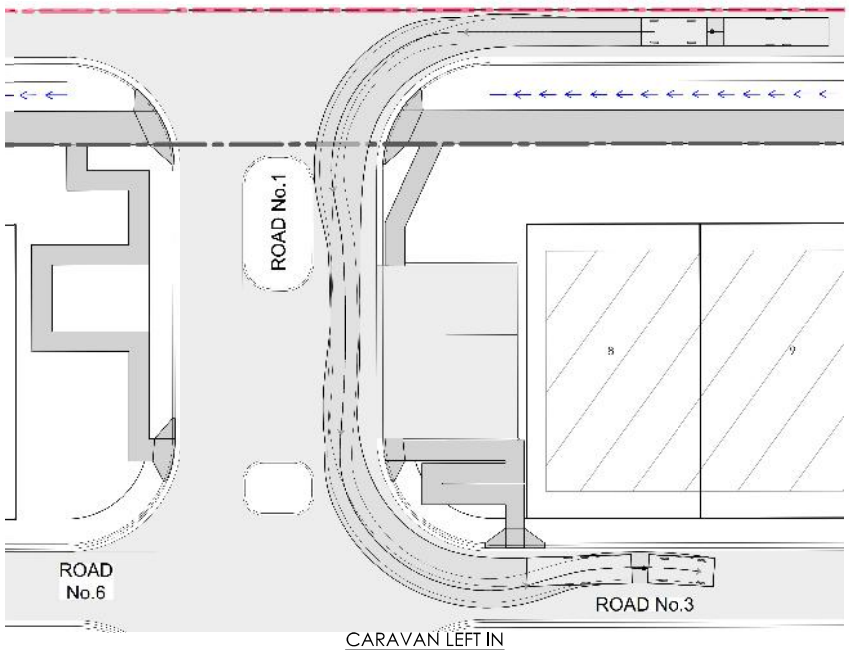
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: VEHICLE SWEPT PATH PLAN SHEET 2

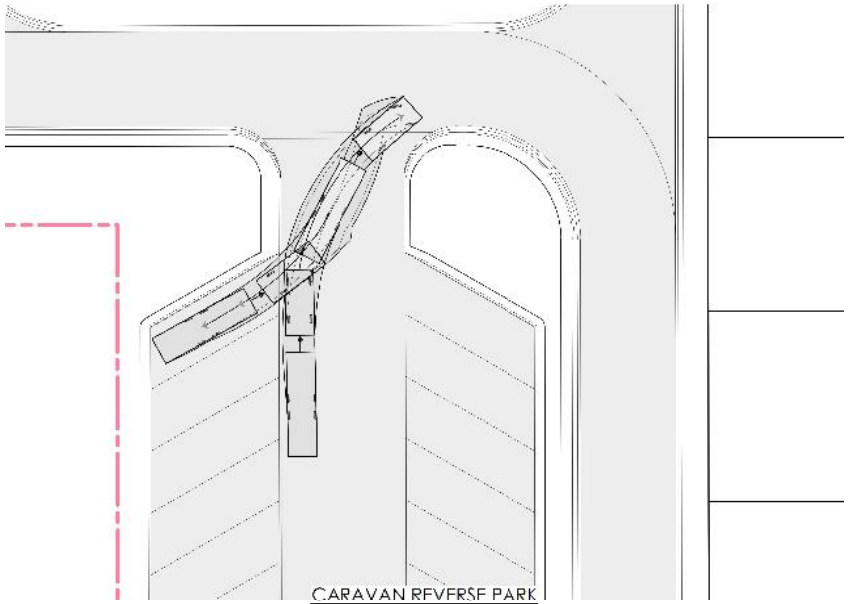
PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	302	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:37PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-301-304.DWG

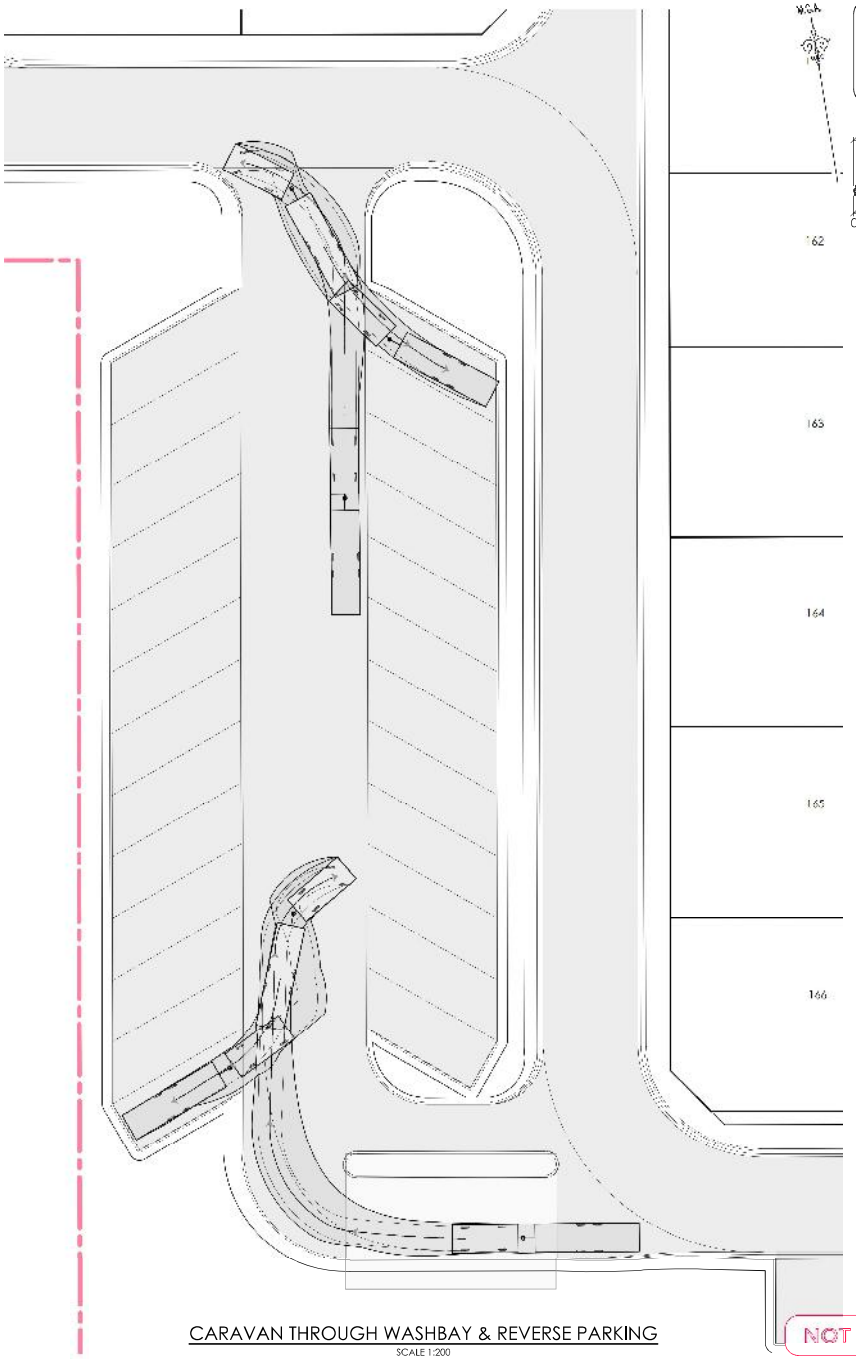
190835-S2-CENG-301-304



CARAVAN LEFT IN
SCALE 1:200

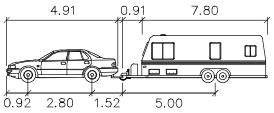


CARAVAN REVERSE PARK
SCALE 1:200



CARAVAN THROUGH WASHBAY & REVERSE PARKING
SCALE 1:200

LEGEND
- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB



B85 + Caravan

	meters
Car Width	: 2.13
Trailer Width	: 2.13
Car Track	: 1.83
Trailer Track	: 2.13
Lock to Lock Time	: 6.0
Steering Angle	: 31.2
Articulating Angle	: 70.0

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 / A3 1:400

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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

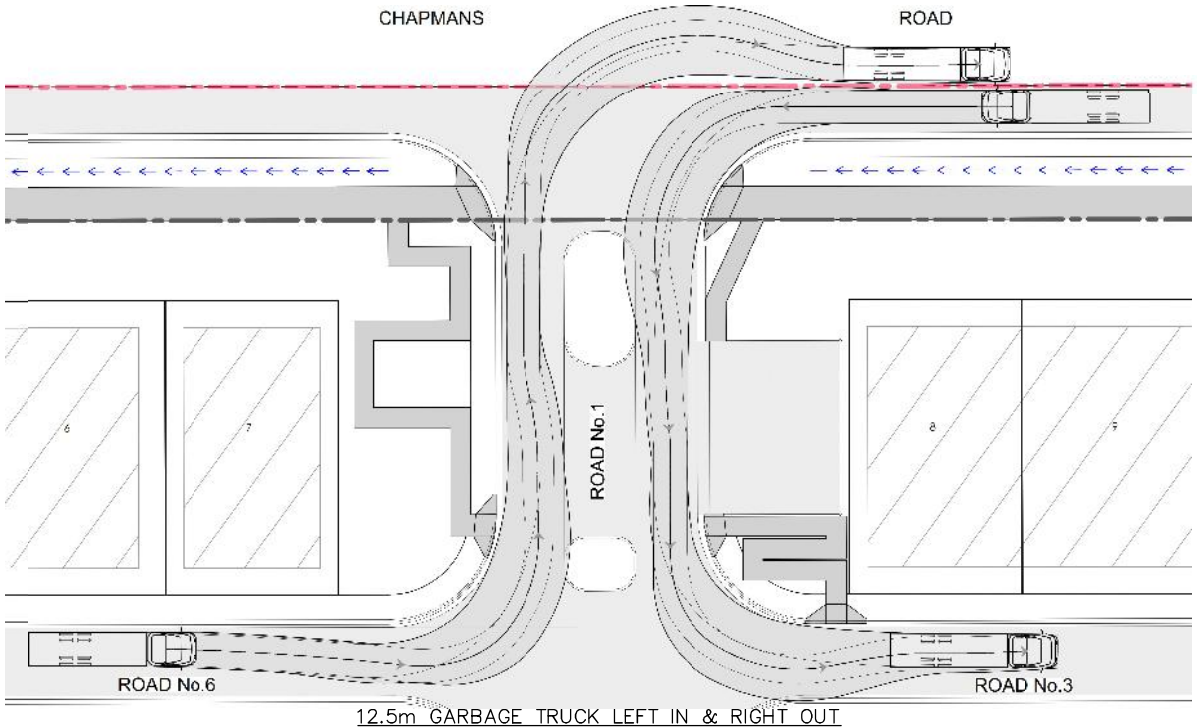
PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: VEHICLE SWEPT PATH PLAN
SHEET 3

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	303	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:41PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-301-304.DWG

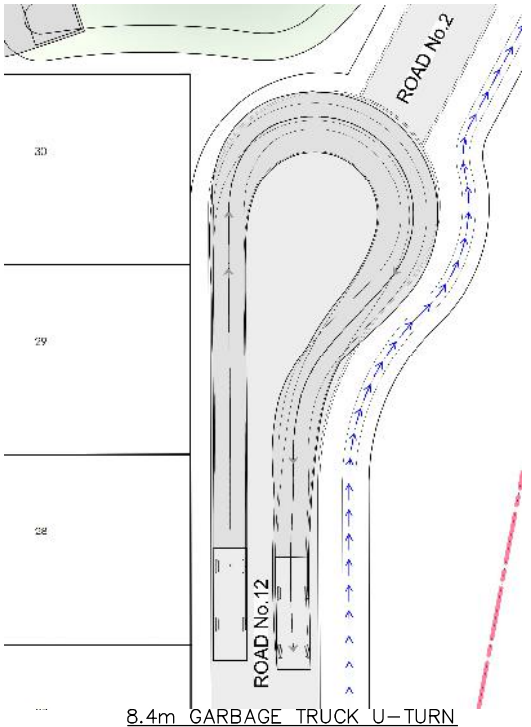
100mm AT FULL SIZE

190835-S2-CENG-301-304



12.5m GARBAGE TRUCK LEFT IN & RIGHT OUT

SCALE 1:200

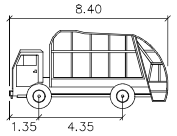


8.4m GARBAGE TRUCK U-TURN

SCALE 1:200

LEGEND

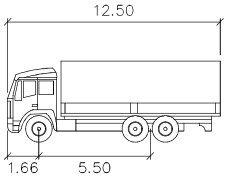
- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB



8.4m Garbage truck SCC

meters

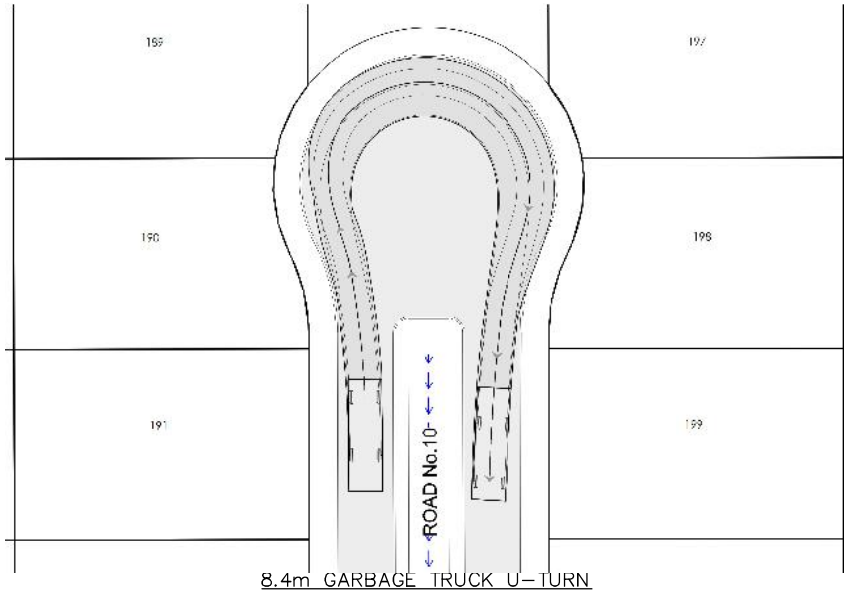
Width	: 2.50
Track	: 2.30
Lock to Lock Time	: 6.0
Steering Angle	: 36.0



PCC GARBAGE TRUCK

meters

Width	: 2.80
Track	: 2.80
Lock to Lock Time	: 6.0
Steering Angle	: 56.1



8.4m GARBAGE TRUCK U-TURN

SCALE 1:200

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 — 0 5.0 10.0m — A3 1:400

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson

Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: VEHICLE SWEPT PATH PLAN
SHEET 4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	304	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:45PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-301-304.DWG

100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190835-S2-CENG-401

CHAPMANS ROAD SWALE DETAIL

SCALE 1:25

STORMWATER DETAIL PLAN

SCALE 1:1000

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:1000, 0, 25, 50m, A3 1:2000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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Central Coast
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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

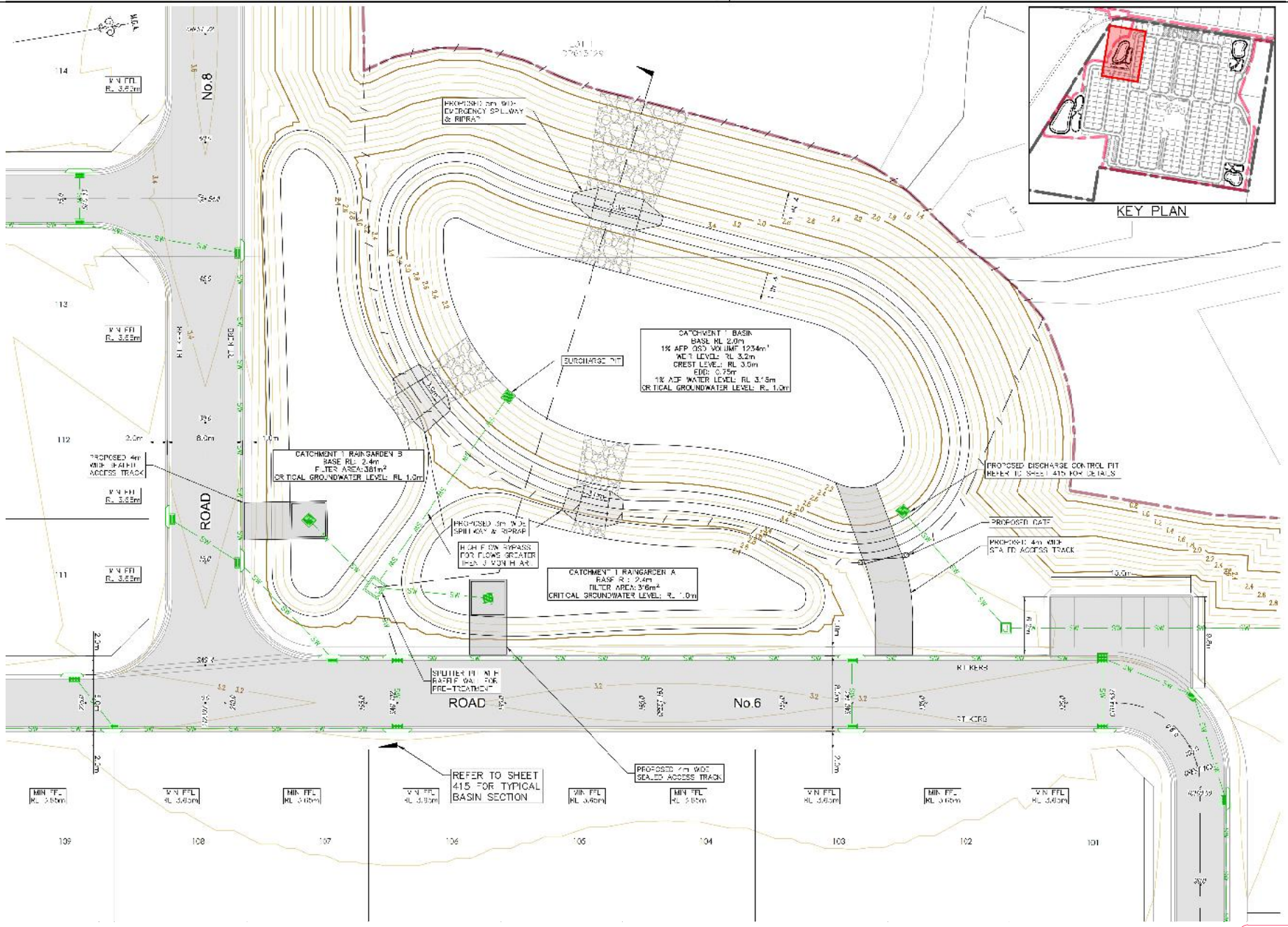
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: STORMWATER LAYOUT PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	401	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:32:52PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-401.DWG

190835-S2-CENG-411-415



KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- C2 CONSERVATION BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXTENTS OF BATTER
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED 1.8m HIGH CHAINWIRE FENCE
- PROPOSED GATE
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED GPT
- PROPOSED LINTEL
- PROPOSED HEADWALL
- PROPOSED SURCHARGE PIT WITH INLET SEDIMENT FOREBAY

CONTOUR INTERVAL = 0.2m

GENERAL NOTES:

1. FOR TYPICAL BASIN AND RAIN GARDEN SECTION REFER TO SHEET 415.

DETAIL PLAN

SCALE 1:200

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 / A3 1:400 (0, 5.0, 10.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY_MHE_STG 2\TUNCURRY_MHE_STG_2.project

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CLIENT: ALLAM PROPERTY GROUP

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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

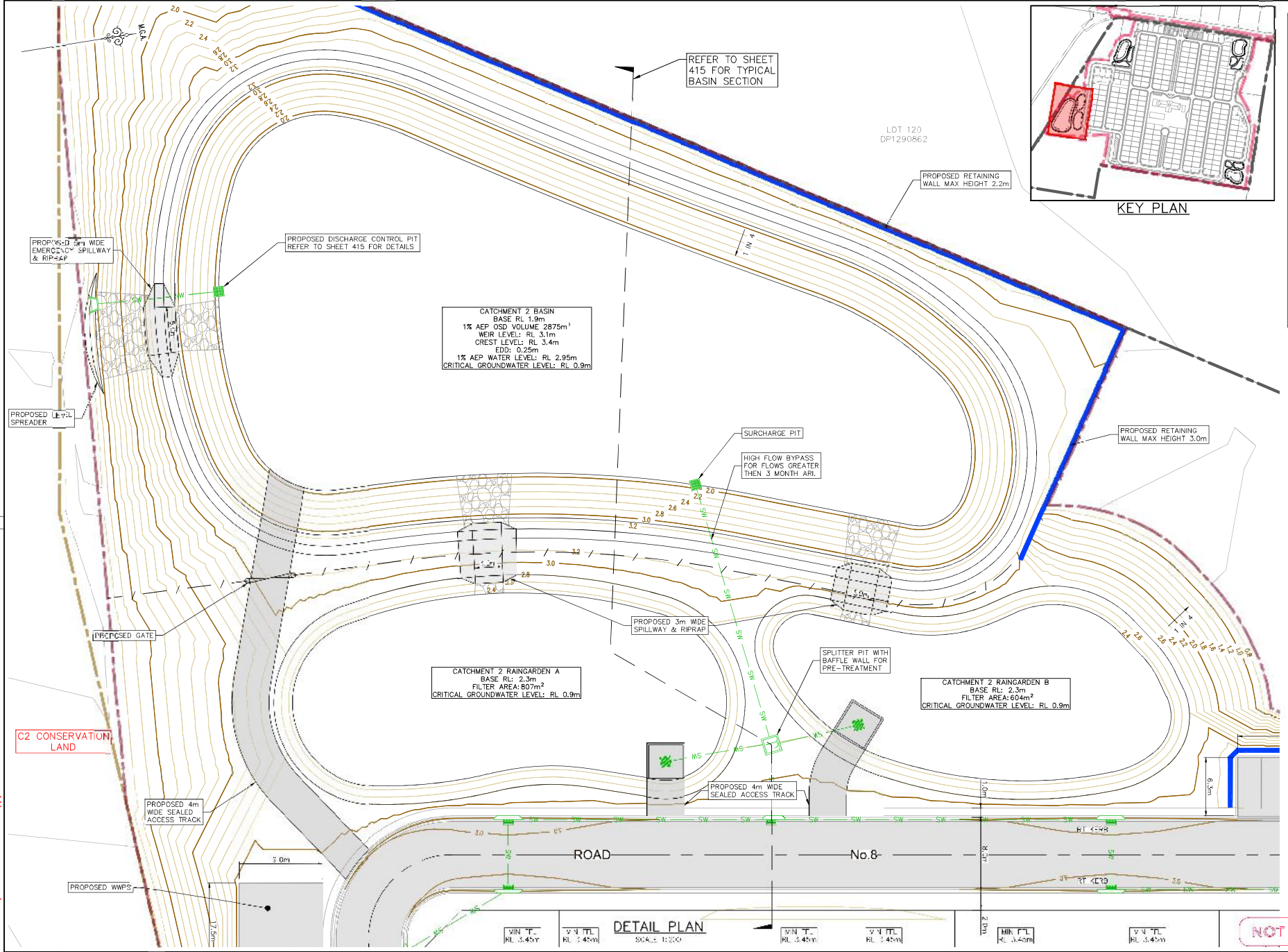
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: BASIN No.1 DETAIL PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	411	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:00PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-411-415.DWG

190835-S2-CENG-411-415



LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- C2 CONSERVATION BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXTENTS OF BATTER
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED 1.8m HIGH CHAINWIRE FENCE
- PROPOSED GATE
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED GPT
- PROPOSED LINTEL
- PROPOSED HEADWALL
- PROPOSED SURCHARGE PIT WITH INLET SEDIMENT FOREBAY

CONTOUR INTERVAL = 0.2m

GENERAL NOTES:

1. FOR TYPICAL BASIN AND RAIN GARDEN SECTION REFER TO SHEET 415.

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SCALES: A1 1:200, A3 1:400

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

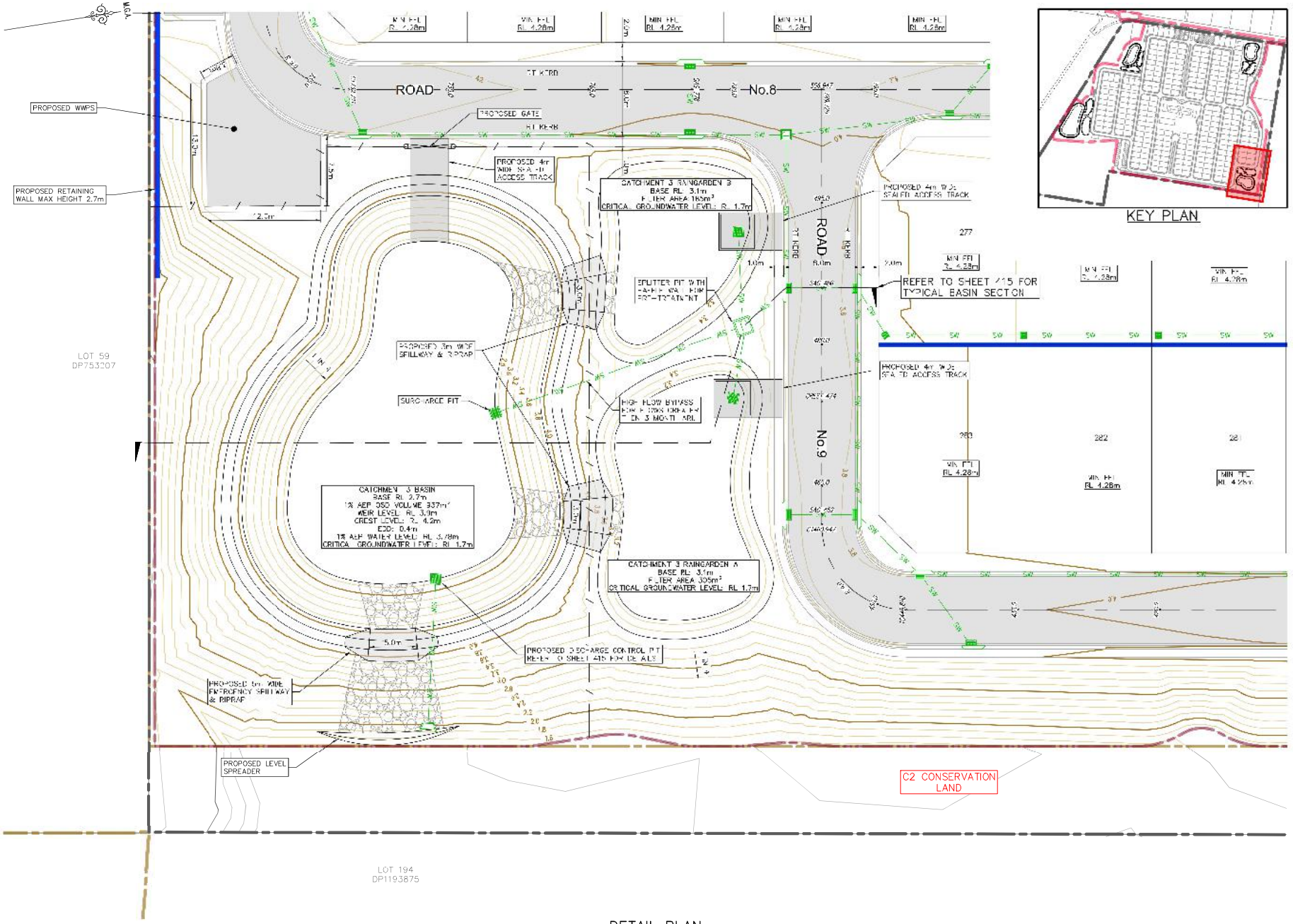
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: BASIN No.2
DETAIL PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	412	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:03PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-411-415.DWG

190835-S2-CENG-411-415



LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- C2 CONSERVATION BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXTENTS OF BATTER
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED 1.8m HIGH CHAINWIRE FENCE
- PROPOSED GATE
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED GPT
- PROPOSED LINTEL
- PROPOSED HEADWALL
- PROPOSED SURCHARGE PIT WITH INLET SEDIMENT FOREBAY

CONTOUR INTERVAL = 0.2m

GENERAL NOTES:

1. FOR TYPICAL BASIN AND RAIN GARDEN SECTION REFER TO SHEET 415.

DETAIL PLAN
SCALE 1:200

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200 / A3 1:400 (0, 5.0, 10.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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PROPERTY DESCRIPTION
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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: BASIN No.3 DETAIL PLAN

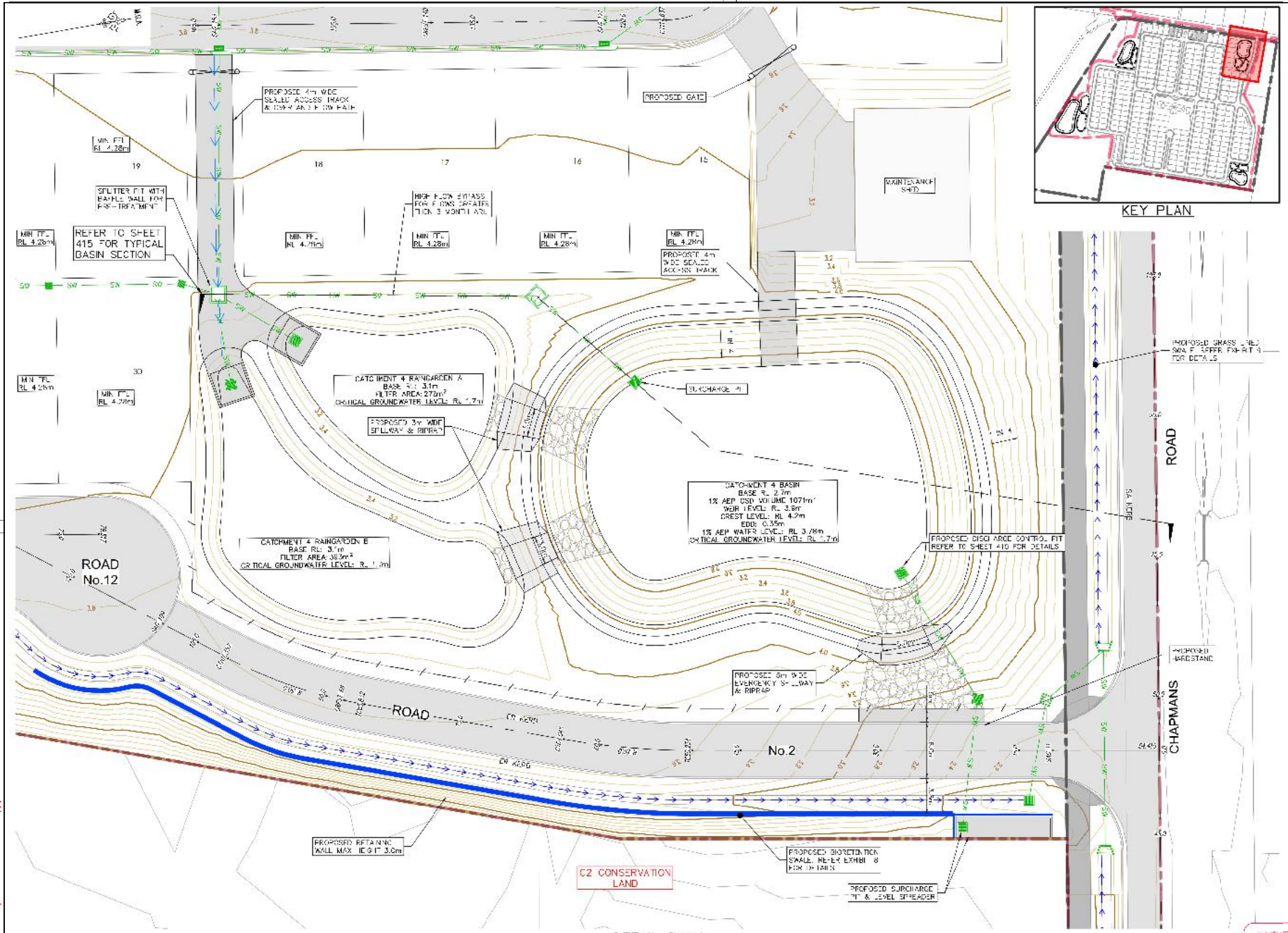
PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	413	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:07PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-411-415.DWG

100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190835-S2-CENG-411-415



KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- C2 CONSERVATION BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED RETAINING WALL
- PROPOSED LEVEL SPREADER
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXTENTS OF BATTER
- PROPOSED SWALE DRAIN
- PROPOSED OVERLAND FLOW PATH
- PROPOSED 1.8m HIGH CHAINWIRE FENCE
- PROPOSED GATE
- PROPOSED STORMWATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD POWER
- EXISTING ELECTRICITY
- EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED GPT
- PROPOSED LINTEL
- PROPOSED HEADWALL
- PROPOSED SURCHARGE PIT WITH INLET SEDIMENT FOREBAY

CONTOUR INTERVAL = 0.2m

GENERAL NOTES:

1. FOR TYPICAL BASIN AND RAIN GARDEN SECTION REFER TO SHEET 415.

DETAIL PLAN
SCALE 1:200

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:200, 0, 5.0, 10.0m, A3 1:400

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

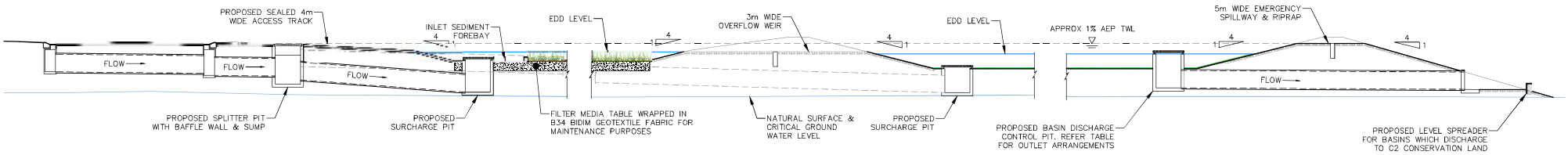
PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: BASIN No.4 DETAIL PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	414	A

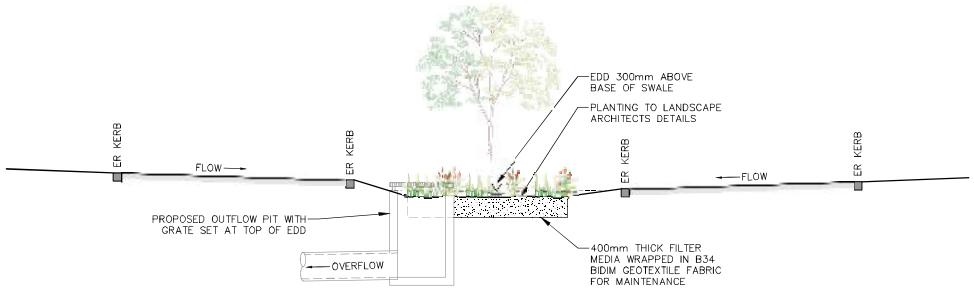
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:12PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-411-415.DWG

190835-S2-CENG-411-415

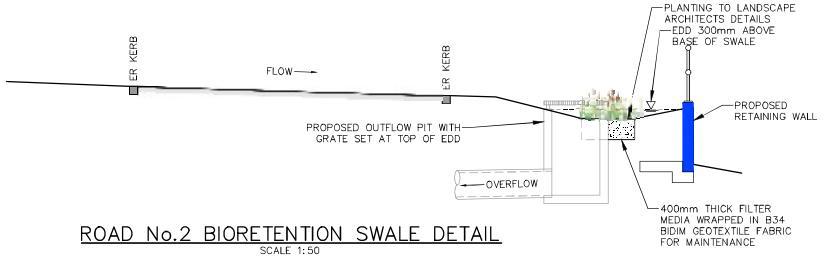
OSD Basin Parameter	Catchment 1 Basin	Catchment 2 Basin	Catchment 3 Basin	Catchment 4 Basin
Outlet Control	1x0.6mx0.6m GSIP with grate at IL 2.95m; 3x0.7x0.25 culvert cutout at IL 2.75m; 5m weir at RL 3.2m.	1x0.6x0.6 GSIP with grate at IL 2.15m; DN450 pipe at IL 1.5m; 5m weir at RL 3.1m.	1x0.6x0.6 GSIP with grate at IL 3.1m; DN225 pipe at IL 1.8m; 5m weir at RL 3.9m.	1x0.6x0.6 GSIP with grate at IL 3.05m; DN300 pipe at IL 2.25m; 5m weir at RL 3.9m.



DRAINAGE RESERVE TYPICAL SECTION
SCALE 1:100



ROAD No.1 & No.10 BIORETENTION SWALE DETAIL
SCALE 1:50



ROAD No.2 BIORETENTION SWALE DETAIL
SCALE 1:50

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SCALES
A1 1:50 0 1.25 2.5m A3 1:100
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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adw Johnson
Central Coast
5 Pioneer Avenue,
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Tuggerah N.S.W. 2259
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CLIENT
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PROPERTY DESCRIPTION
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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED ADW Johnson
DATUM GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT
PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE
BASIN & RAINGARDEN
TYPICAL SECTION

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	415	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:13PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-411-415.DWG

190835-S2-CENG-501

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- PROPOSED RETAINING WALL

CONTOUR INTERVAL = 1.0m

LEGEND (+ FILL – CUT) Lower		Upper	Colour
−2.00	to	−1.75 m	
−1.75	to	−1.50 m	
−1.50	to	−1.25 m	
−1.25	to	−1.00 m	
−1.00	to	−0.75 m	
−0.75	to	−0.50 m	
−0.50	to	−0.25 m	
−0.25	to	0.00 m	
0.00	to	0.25 m	
0.25	to	0.50 m	
0.50	to	0.75 m	
0.75	to	1.00 m	
1.00	to	1.25 m	
1.25	to	1.50 m	
1.50	to	1.75 m	
1.75	to	2.00 m	
2.00	to	2.50 m	
2.50	to	3.00 m	
3.00	to	3.50 m	
3.50	to	4.00 m	

CUT/FILL VOLUMES

CUT:	520m³
FILL:	403,540m³
SHORTAGE OF MATERIAL:	403,020m³

* CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

GENERAL NOTES:

1. FOR SITE REGRADE SECTIONS REFER TO SHEETS 511–517

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SITE REGRADE PLAN

SCALE 1:1000

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SCALES: A1 1:1000, A3 1:2000

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adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
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Fax: (02) 4305 4399
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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

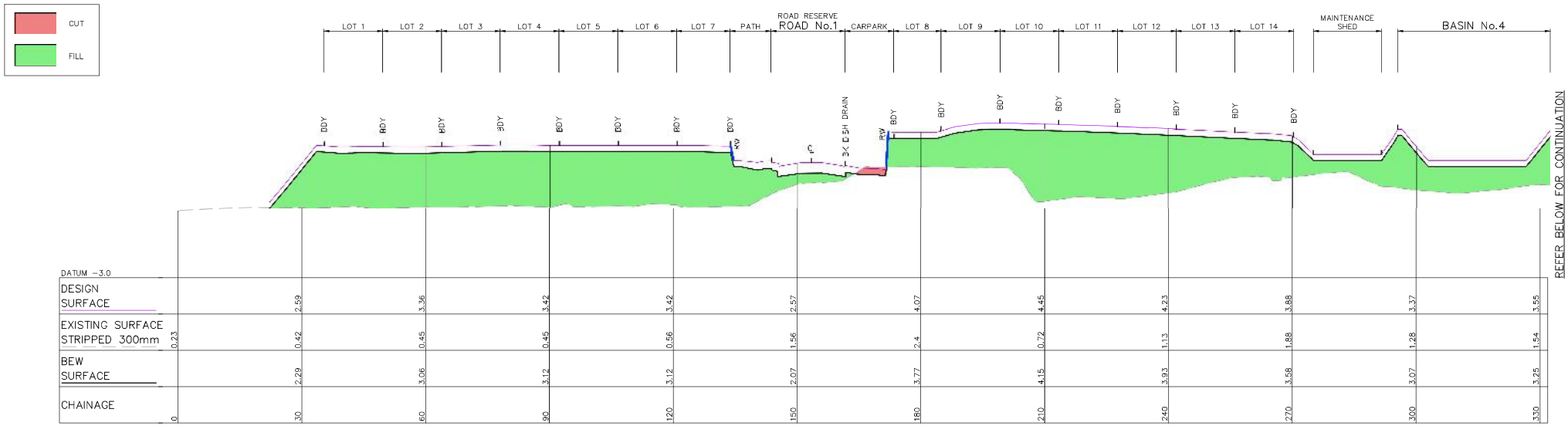
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: SITE REGRADE PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	501	A

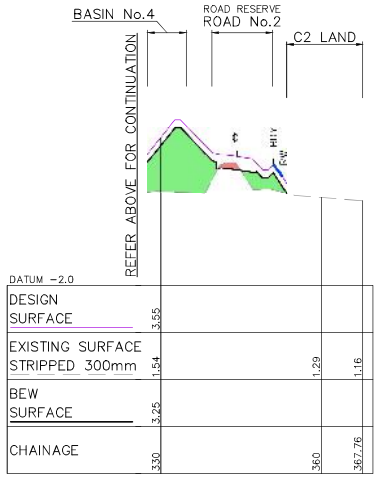
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:21PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-501.DWG

190835-S2-CENG-511



SITE SECTION A – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION A – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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Central Coast
5 Pioneer Avenue,
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Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
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ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

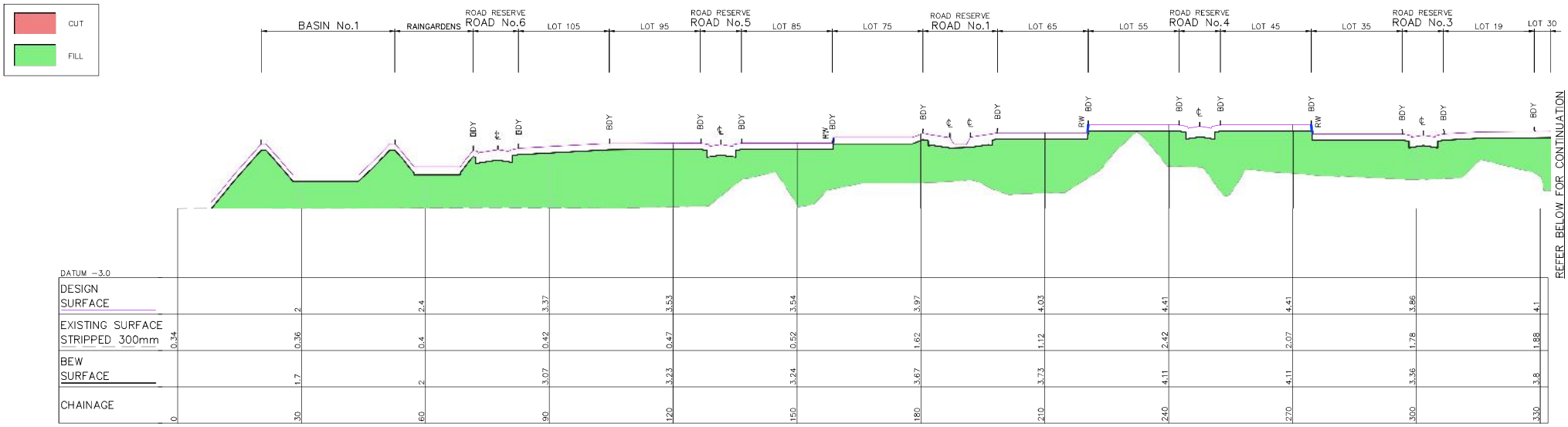
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	511	A

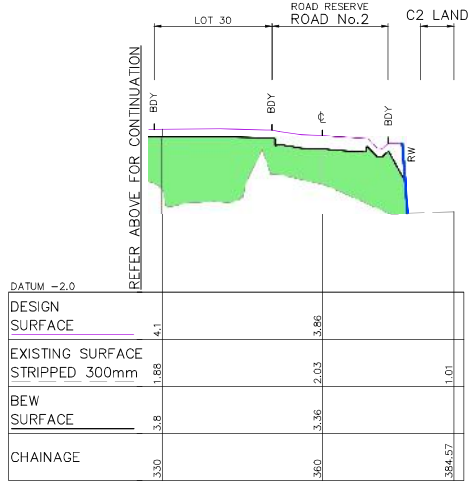
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:26PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-511.DWG

190835-S2-CENG-512



SITE SECTION B – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION B – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
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Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
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CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
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40-80, 82 CHAPMANS ROAD
TUNCURRY

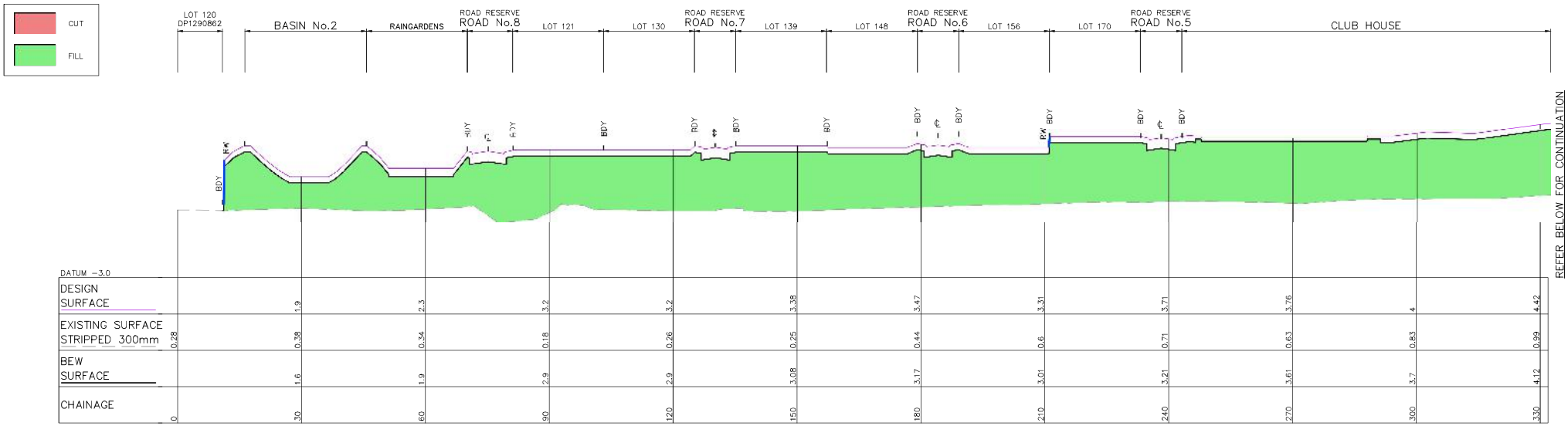
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS SHEET 2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	512	A

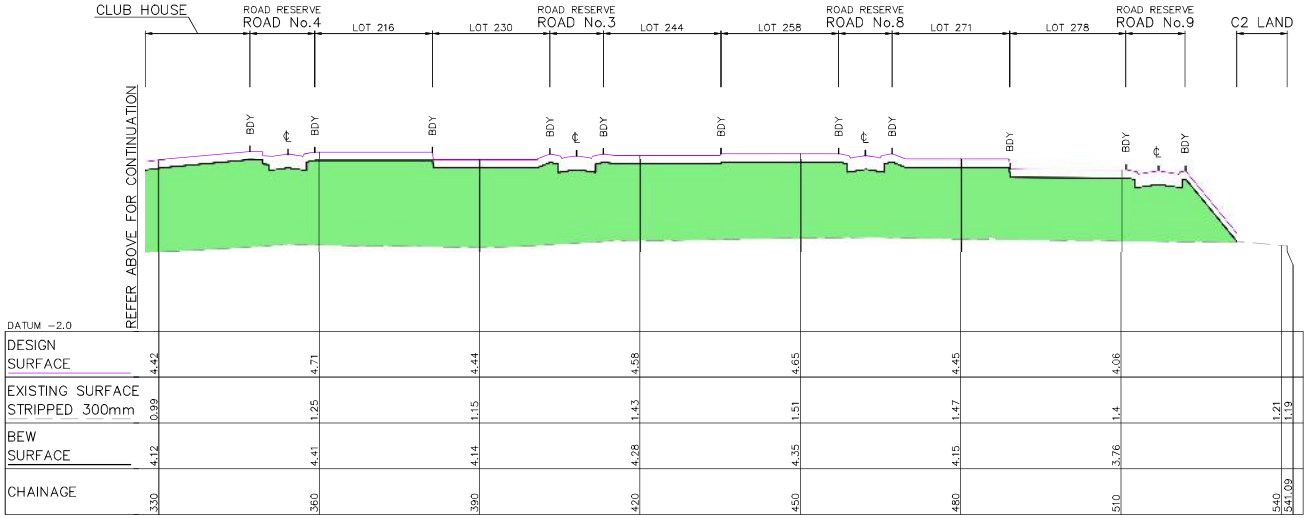
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:30PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-512.DWG

190835-S2-CENG-513



SITE SECTION C – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION C – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

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adw Johnson
Central Coast
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CLIENT: ALLAM PROPERTY GROUP

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40-80, 82 CHAPMANS ROAD
TUNCURRY

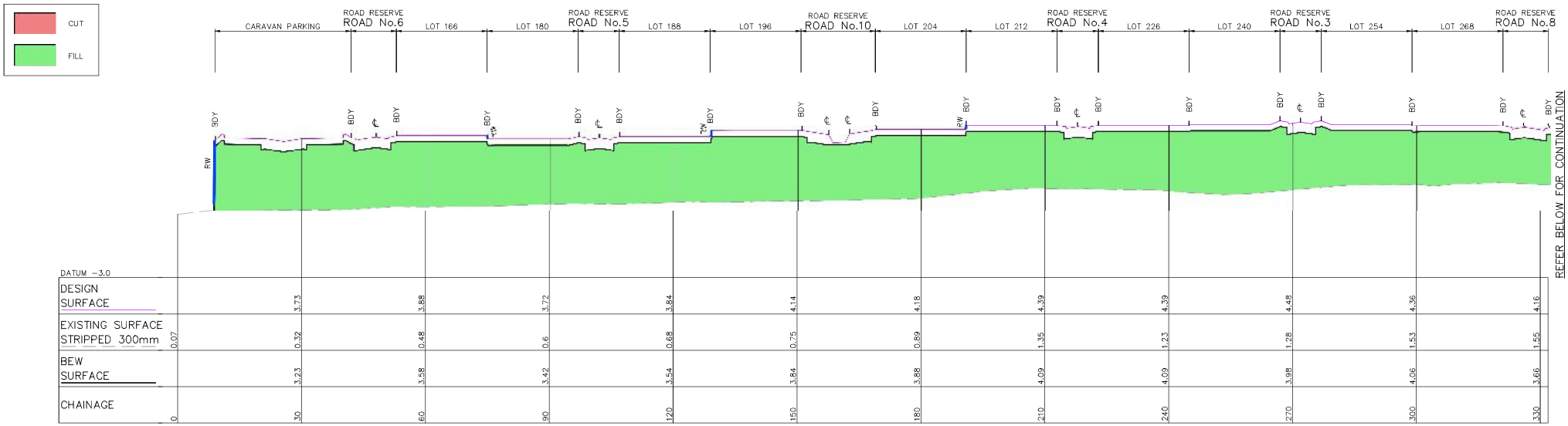
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS SHEET 3

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	513	A

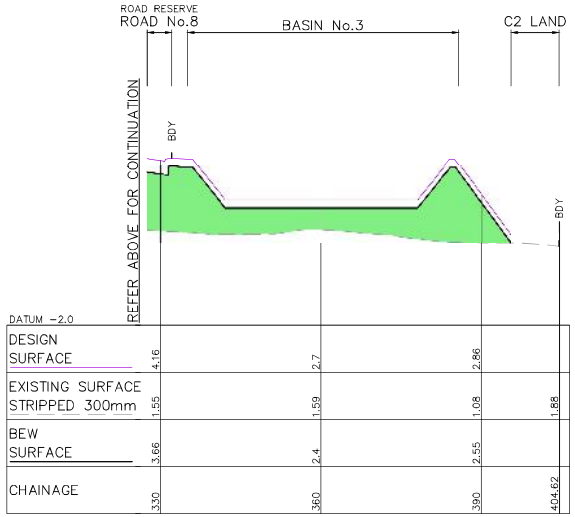
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:34PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-513.DWG

190835-S2-CENG-514



SITE SECTION D – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION D – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

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CLIENT: ALLAM PROPERTY GROUP

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40-80, 82 CHAPMANS ROAD
TUNCURRY

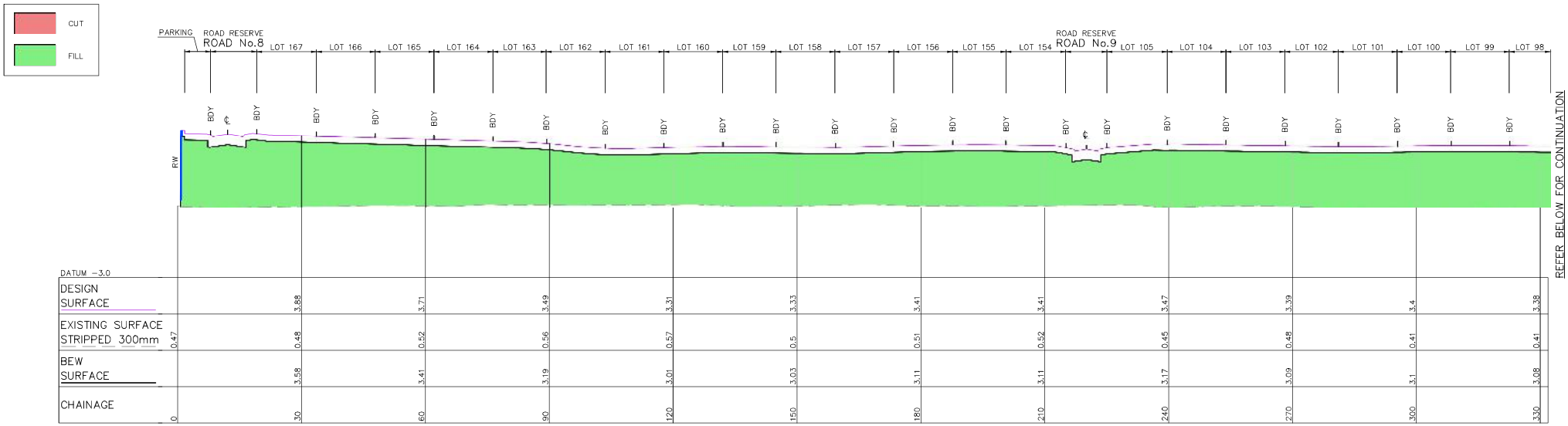
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS SHEET 4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	514	A

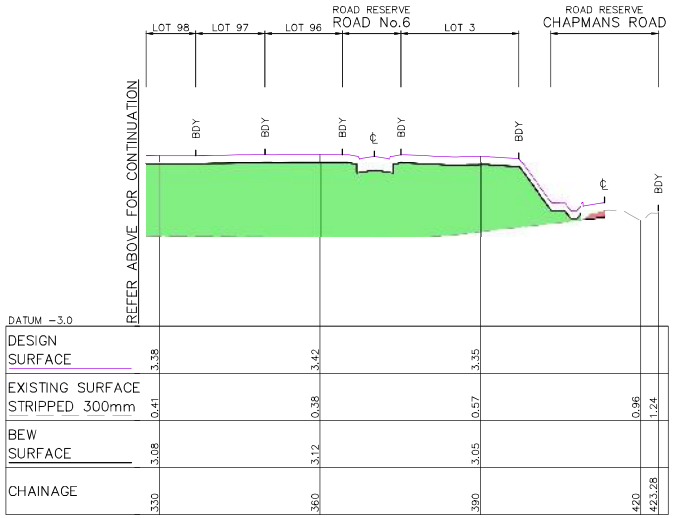
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:39PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-514.DWG

190835-S2-CENG-515



SITE SECTION E – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION E – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

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PROPERTY DESCRIPTION
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40-80, 82 CHAPMANS ROAD
TUNCURRY

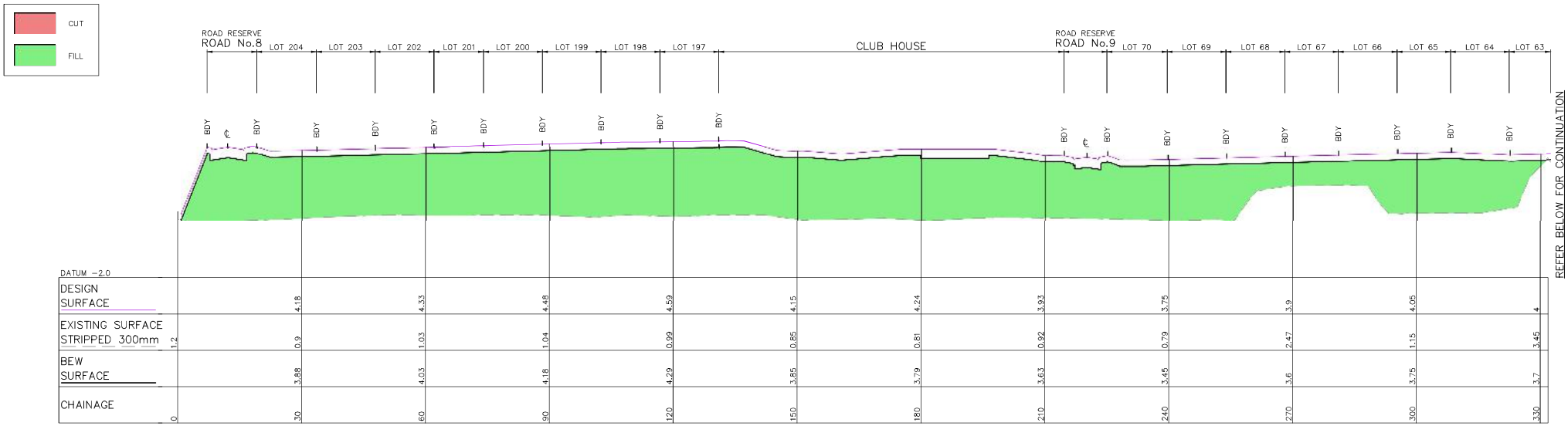
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS
SHEET 5

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	515	A

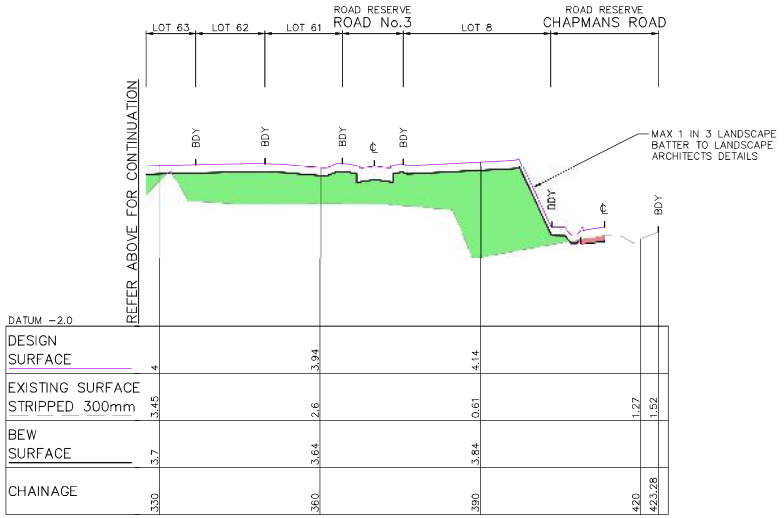
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:43PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-515.DWG

190835-S2-CENG-516



SITE SECTION F – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION F – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
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A1 1:100 0 2.5 5.0m A3 1:200

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project
ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT
ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

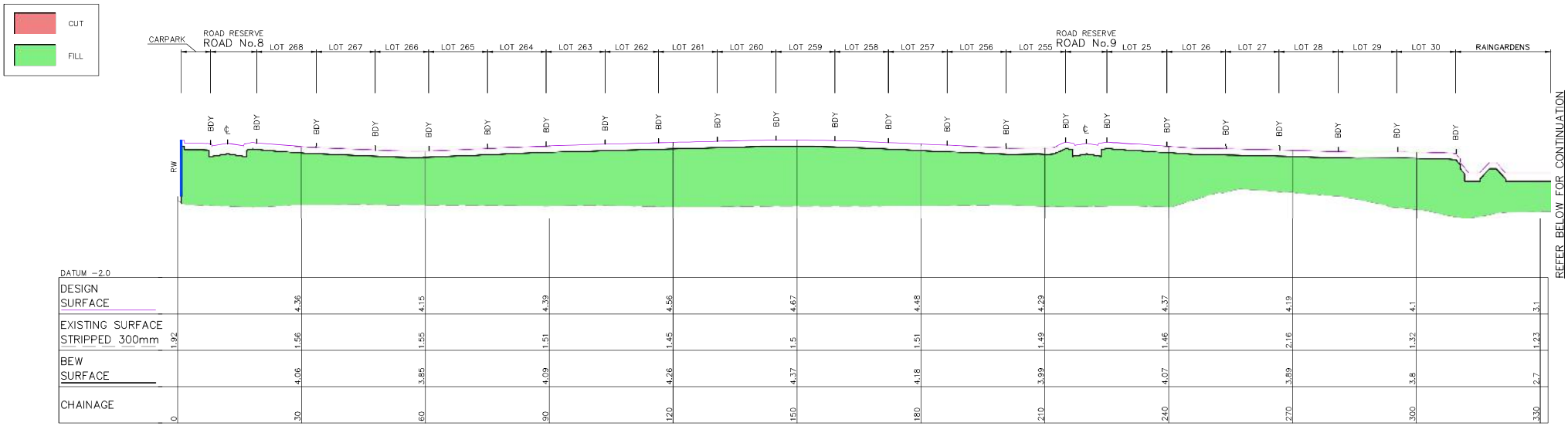
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS SHEET 6

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	516	A

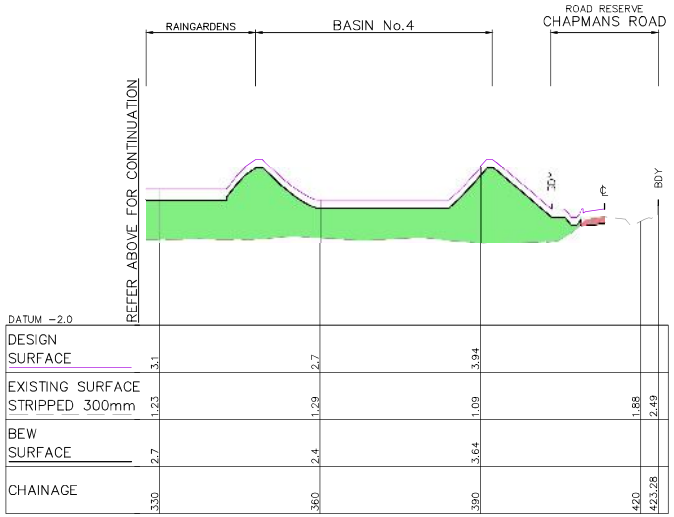
Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:47PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-516.DWG

190835-S2-CENG-517



SITE SECTION G – PART 1

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SITE SECTION G – PART 2

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

GENERAL NOTES

1. CUT/FILL CALCULATIONS BASED ON CONCEPTUAL EARTHWORK VOLUMES BETWEEN 300mm STRIPPED NATURAL SURFACE & COMBINED DESIGN MINUS 300mm & ROAD BOXING SURFACE

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SCALES
A1 1:500 0 12.5 25.0m A3 1:1000
A1 1:100 0 2.5 5.0m A3 1:200

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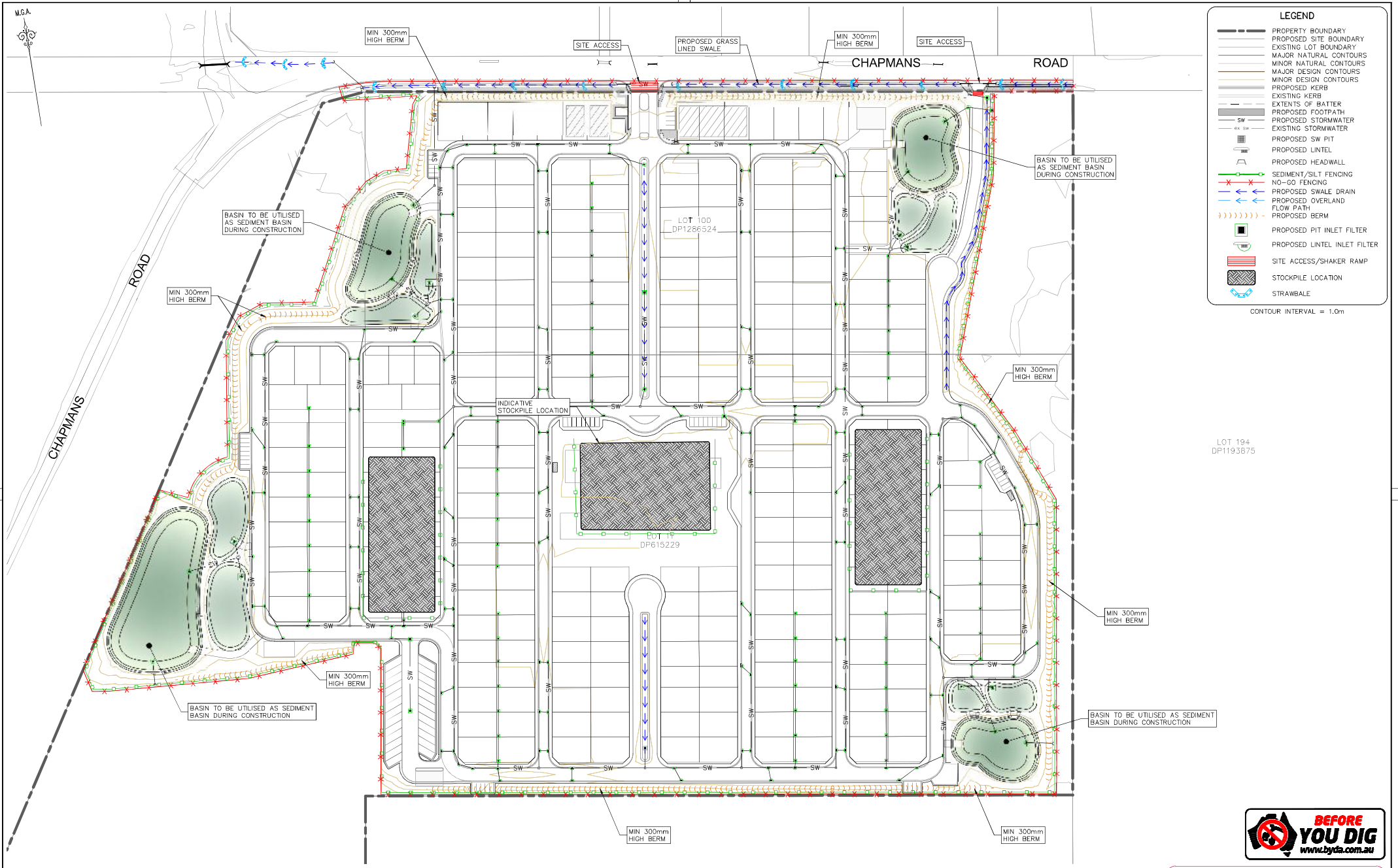
PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: SITE REGRADE SECTIONS
SHEET 7

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	517	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:51PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-517.DWG

190835-S2-CENG-601



EROSION & SEDIMENT CONTROL PLAN

SCALE 1:1000

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SCALES: A1 1:1000 — 0 25 50m — A3 1:2000

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TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: EROSION & SEDIMENT CONTROL PLAN

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	601	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:33:57PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-601.DWG

100mm AT FULL SIZE

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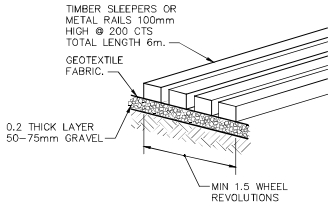
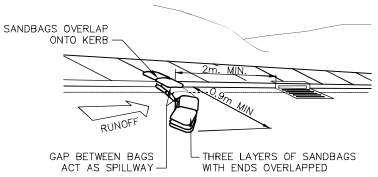
190835-S2-CENG-611

EROSION AND SEDIMENTATION CONTROL NOTES:

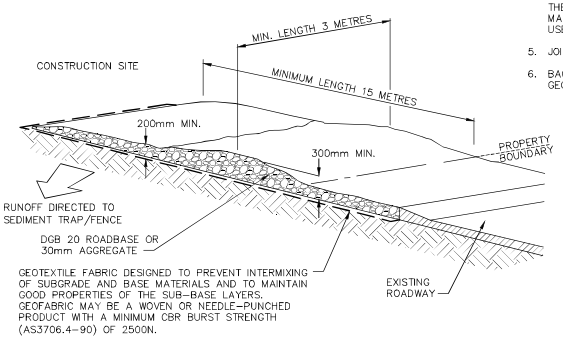
1. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSISTENT WITH THE APPROVED MASTERPLAN DOCUMENTS AND THE "MANAGING URBAN STORMWATER" – 3RD EDITION (1998) PREPARED BY THE NSW DEPARTMENT OF HOUSING.
2. DISTURBED AREAS TO BE KEPT TO A MINIMUM. NO MORE THAN 2.5HA OF THE SITE SHALL BE EXPOSED TO EROSION AT ANY ONE TIME.
3. CONTROL CLEAN WATER FROM ABOVE THE SITE, THROUGH THE SITE.
4. KEEP CLEAN WATER SEPARATE FROM DIRTY WATER.
5. CONSERVE ALL TOPSOIL, STOCKPILE AND PROTECT FOR REUSE ON SITE.
6. PROTECT ALL DISTURBED AREAS FROM EROSION.
7. MINIMISE SEDIMENTATION.
8. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL COMPLETE REHABILITATION IS ACHIEVED.
9. CONSTRUCT STABILISED EARTH BERMS TO DIRECT CLEAN RUNOFF FROM ENTERING THE DISTURBED SITE.
10. WATER QUALITY BASIN TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION
11. CONSTRUCT STABILISED DIVERSION BANKS TO COLLECT RUNOFF FROM DISTURBED AREAS AND DIRECT IT TO A SEDIMENT BASIN.
12. PLACE SEDIMENT INLET TRAPS AROUND ALL PITS WITHIN AND DOWNSTREAM OF THE DEVELOPMENT.
13. PLACE GRAVEL BAG GROYNES IN GUTTERS AT 20 – 25m INTERVALS.
14. PLACE STRAWBALES IN SWALES AT 40 – 50m INTERVALS.
15. PLACE STRAWBALES ACROSS OVERLAND FLOW PATH PRIOR TO THE RUNOFF ENTERING DRAINAGE SYSTEM.
16. STOCKPILES OF MATERIAL TO BE PLACED AWAY FROM DRAINAGE FLOW PATHS AND HEAVILY TRAFFICABLE AREAS AND TO BE SURROUNDED BY SILT FENCING AT ALL TIMES.
17. CONSTRUCT AN ALL WEATHER CONSTRUCTION ACCESS TO THE SITE.
18. ALL DISTURBED AREAS ARE TO BE REVEGETATED OR OTHERWISE PROTECTED AS SOON AS PRACTICAL.
19. ERECT AND MAINTAIN SILT FENCES AT THE DOWNSLOPE SIDE OF DISTURBED AREA DURING CONSTRUCTION.
20. AREAS OUTSIDE THE BOUNDARIES OF THE PROPOSED DEVELOPMENT WILL BE FENCED WITH NO GO FENCING TO KEEP THE AREAS FREE FROM DISTURBANCE OF MACHINERY, PARKED VEHICLES AND WASTE MATERIAL.
22. TREES TO BE RETAINED WITHIN THE CONSTRUCTION AREAS ARE TO BE PROTECTED BY TREE PROTECTION FENCING IN ACCORDANCE WITH THE APPROVED CMP.
23. ESTABLISH A RESTRICTION BOUNDARY AROUND PROTECTED PLANT WITH PARAWEB FENCING. TEMPORARILY RELOCATE FENCE TO ALLOW CONSTRUCTION OF REQUIRED WORKS AND RE-ESTABLISH PROTECTION ZONE AFTER WORKS COMPLETES.
24. THE SEDIMENT BASINS WILL REQUIRE MAINTENANCE THROUGHOUT THE CONSTRUCTION PROCESS. ADDITIONALLY, THE SEDIMENT BASINS WILL REQUIRE FLOCCULATION IN ACCORDANCE WITH APPENDIX E OF THE 'BLUE BOOK'. THE CONTRACTOR IS TO ABIDE BY APPENDIX E OF THE 'BLUE BOOK' TO ENSURE ADEQUATE FLOCCULATION OCCURS.
25. THE CONTRACTOR IS TO INSPECT, CLEAN AND REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. IT IS EXPECTED THAT THE EROSION AND SEDIMENT CONTROL MEASURES ARE INSPECTED DAILY AS WELL AS AFTER STORM EVENTS BY THE CONTRACTOR. THE CONTRACTOR IS TO CLEAN AND REPAIR EROSION AND SEDIMENT CONTROL MEASURES TO ENSURE THEY ARE ABLE TO COMPLETE THE REQUIRED TASK AS PER FIRST INSTALLATION.
26. EROSION CONTROL SHOWN IS INDICATIVE ONLY AND SHALL BE A GUIDE FOR THE CONTRACTOR TO PREPARE THEIR OWN EROSION CONTROL DOCUMENTATION PRIOR TO CONSTRUCTION.



SHAKER RAMP
N.T.S.

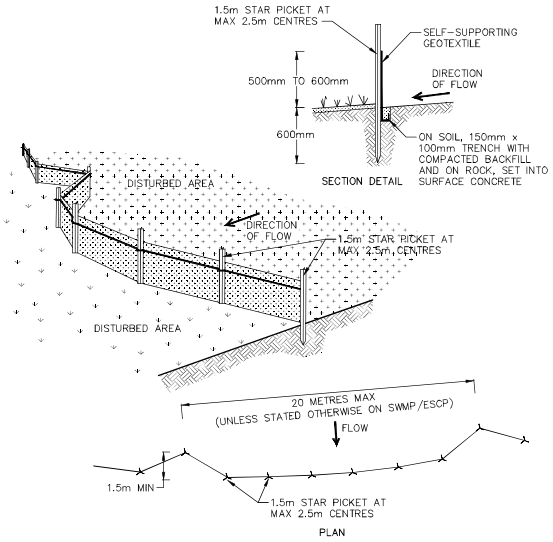


SANDBAG KERB INLET SEDIMENT TRAP
NTS



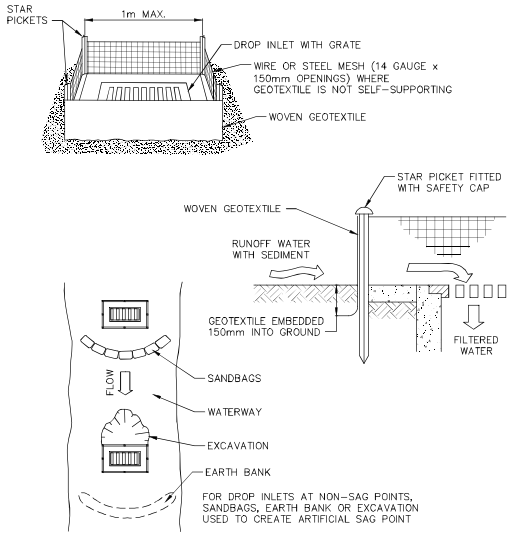
STABILISED SITE ACCESS (SD6-14)
N.T.S.

CONSTRUCTION NOTES:
1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.



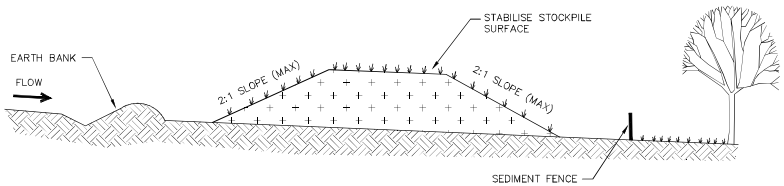
SEDIMENT FENCE (SD6-8)
N.T.S.

CONSTRUCTION NOTES:
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



GEOTEXTILE INLET FILTER (SD6-12)
N.T.S.

CONSTRUCTION NOTES:
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. REFER STANDARD DRAWINGS 6-7 & 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.



STOCKPILES (SD4-1)
N.T.S.

CONSTRUCTION NOTES:
1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

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TUNCURRY

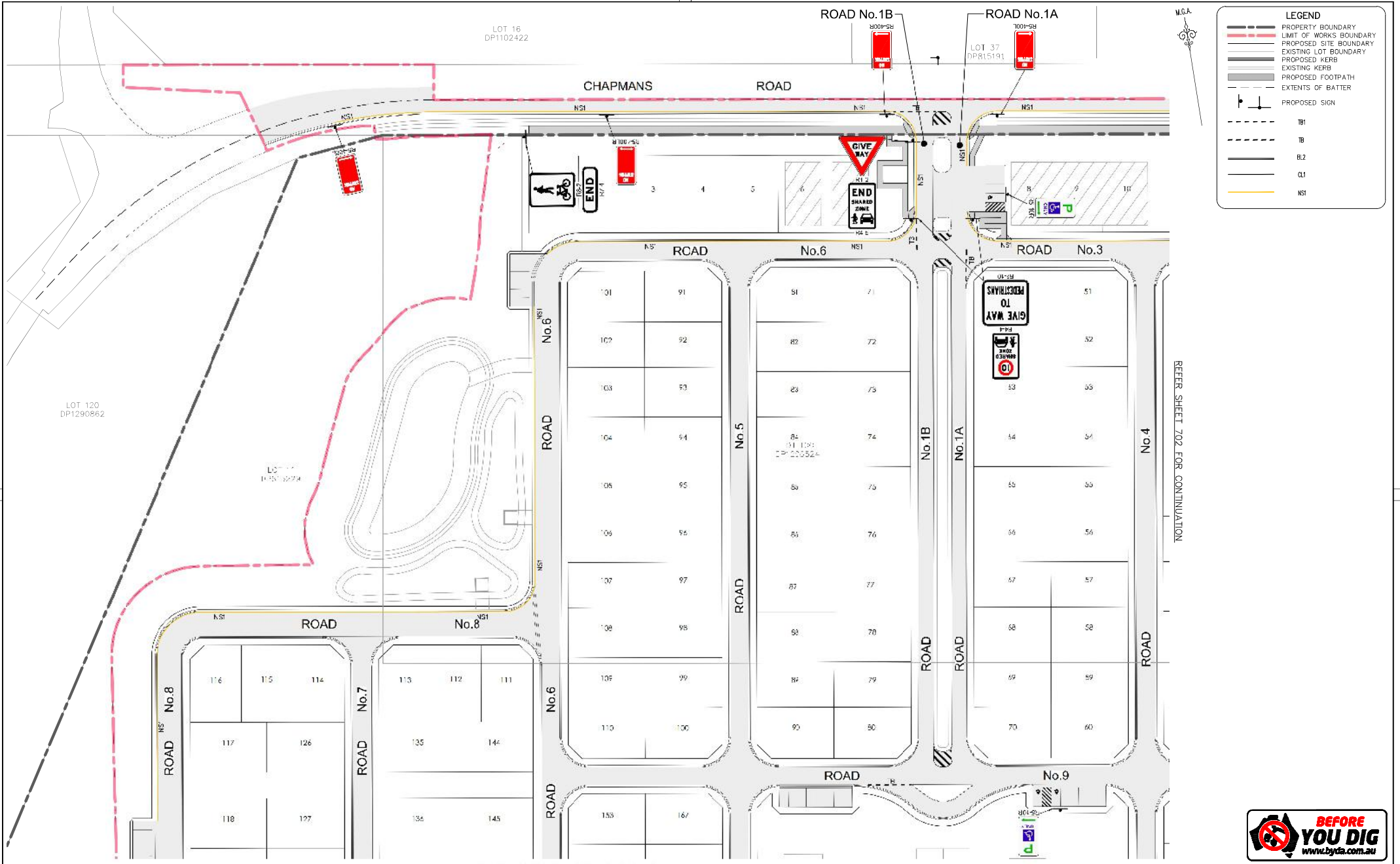
SURVEYED: ADW Johnson
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: EROSION & SEDIMENT CONTROL DETAILS & NOTES

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	611	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:01PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-611.DWG

190835-S2-CENG-701-704



TRAFFIC MANAGEMENT PLAN

SCALE 1:500

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SCALES: A1 1:500 / A3 1:1000 (0, 12.5, 25.0m)

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PLAN TITLE: TRAFFIC MANAGEMENT PLAN
SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	701	A

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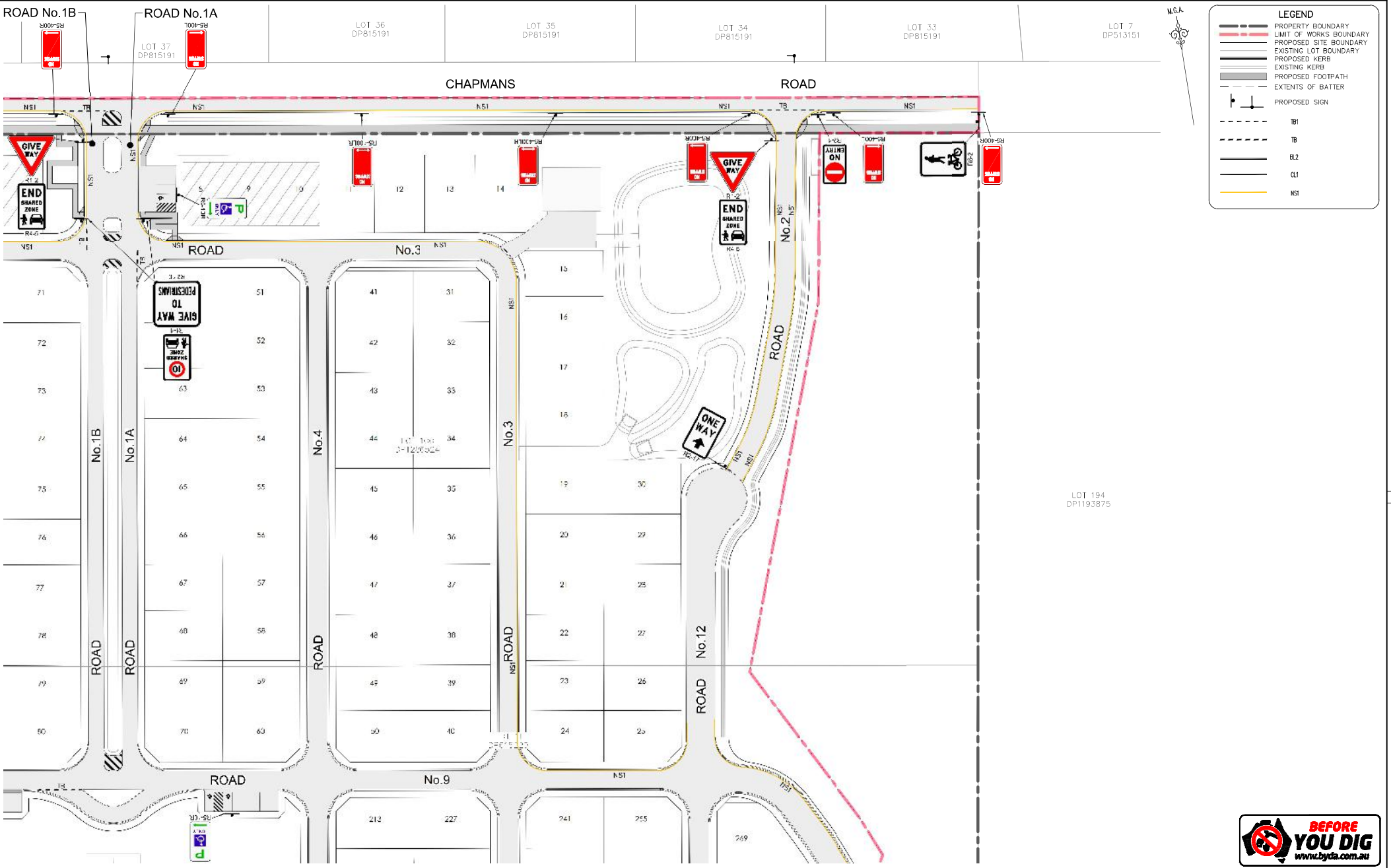

REFER SHEET 701 FOR CONTINUATION

REFER SHEET 704 FOR CONTINUATION

TRAFFIC MANAGEMENT PLAN

SCALE 1:500

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SCALES: A1 1:500, A3 1:1000 (0, 12.5, 25.0m)

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PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: TRAFFIC MANAGEMENT PLAN
SHEET 2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	702	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:09PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-701-704.DWG

190835-S2-CENG-701-704

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TRAFFIC MANAGEMENT PLAN
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PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: TRAFFIC MANAGEMENT PLAN SHEET 3

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	703	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:10PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-701-704.DWG

190835-S2-CENG-701-704

REFER SHEET 702 FOR CONTINUATION

REFER SHEET 703 FOR CONTINUATION

M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB
- EXISTING KERB
- PROPOSED FOOTPATH
- EXTENTS OF BATTER
- PROPOSED SIGN
- TB1
- TB
- BL2
- CL1
- NS1

TRAFFIC MANAGEMENT PLAN

SCALE 1:500

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PROJECT: PROPOSED MANUFACTURED HOME ESTATE
PLAN TITLE: TRAFFIC MANAGEMENT PLAN SHEET 4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	704	A

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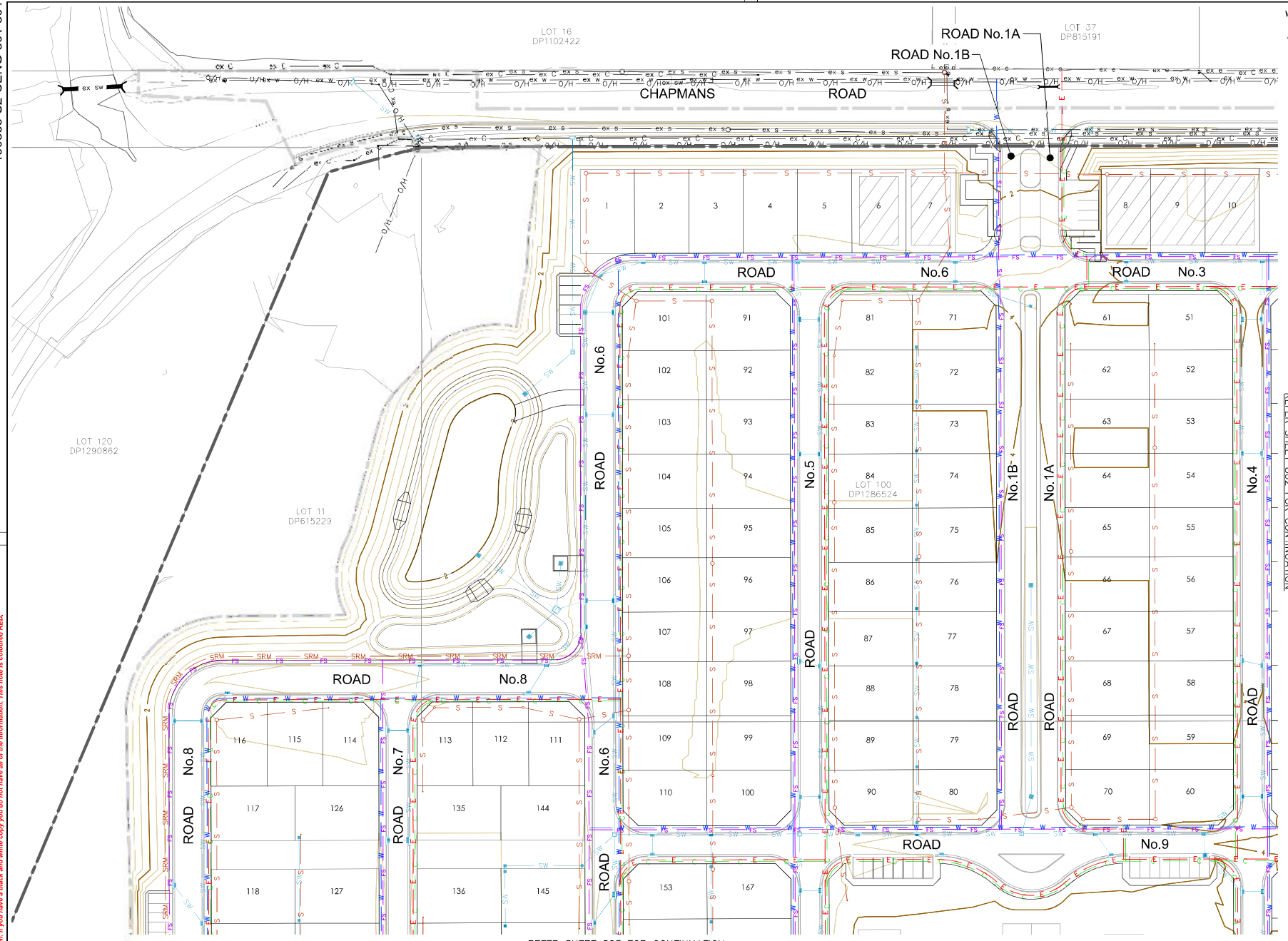
100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190835-S2-CENG-801-804



REFER SHEET 803 FOR CONTINUATION

COMBINED SERVICES PLAN

SCALE 1:500

M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- SW PROPOSED STORMWATER
- S PROPOSED SEWER
- SRM PROPOSED SEWER RISING MAIN
- W PROPOSED WATER\FIRE
- FS PROPOSED WATER\FIRE
- E PROPOSED ELECTRICITY
- C PROPOSED COMMS
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- ex c EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

NOTE:

1. SERVICES LAYOUT IS INDICATIVE ONLY AND WILL BE AMENDED AT DETAILED DESIGN PHASE.

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, A3 1:1000 (0, 12.5, 25.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw Johnson
Central Coast
5 Pioneer Avenue,
P.O. Box 3717,
Tuggerah N.S.W. 2259
Phone: (02) 4305 4300
Fax: (02) 4305 4399
email: coast@adwjohnson.com.au
www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION: LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

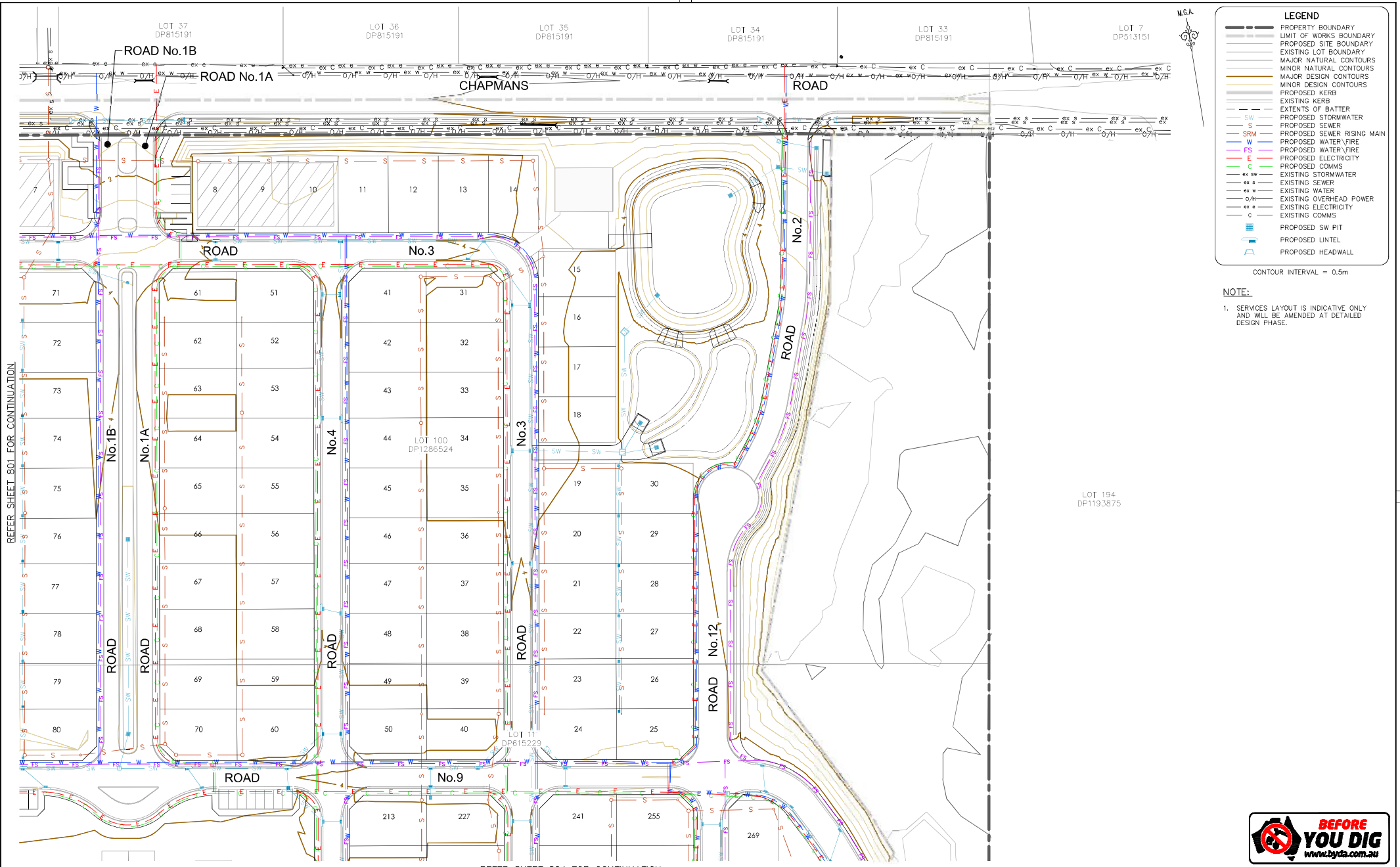
PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: COMBINED SERVICES PLAN
SHEET 1

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	801	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:18PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-801-804.DWG

190835-S2-CENG-801-804



COMBINED SERVICES PLAN

SCALE 1:500

M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
- EXTENTS OF BATTER
- SW PROPOSED STORMWATER
- S PROPOSED SEWER
- SRM PROPOSED SEWER RISING MAIN
- W PROPOSED WATER\FIRE
- FS PROPOSED WATER\FIRE
- E PROPOSED ELECTRICITY
- C PROPOSED COMMS
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- ex C EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

NOTE:

1. SERVICES LAYOUT IS INDICATIVE ONLY AND WILL BE AMENDED AT DETAILED DESIGN PHASE.

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SCALES: A1 1:500, A3 1:1000

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Central Coast
5 Pioneer Avenue,
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www.adwjohnson.com.au
ABN 62 129 445 398

CLIENT: ALLAM PROPERTY GROUP

PROPERTY DESCRIPTION
LOT 100, D.P. 1286524 & LOT 11, D.P.615229
40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

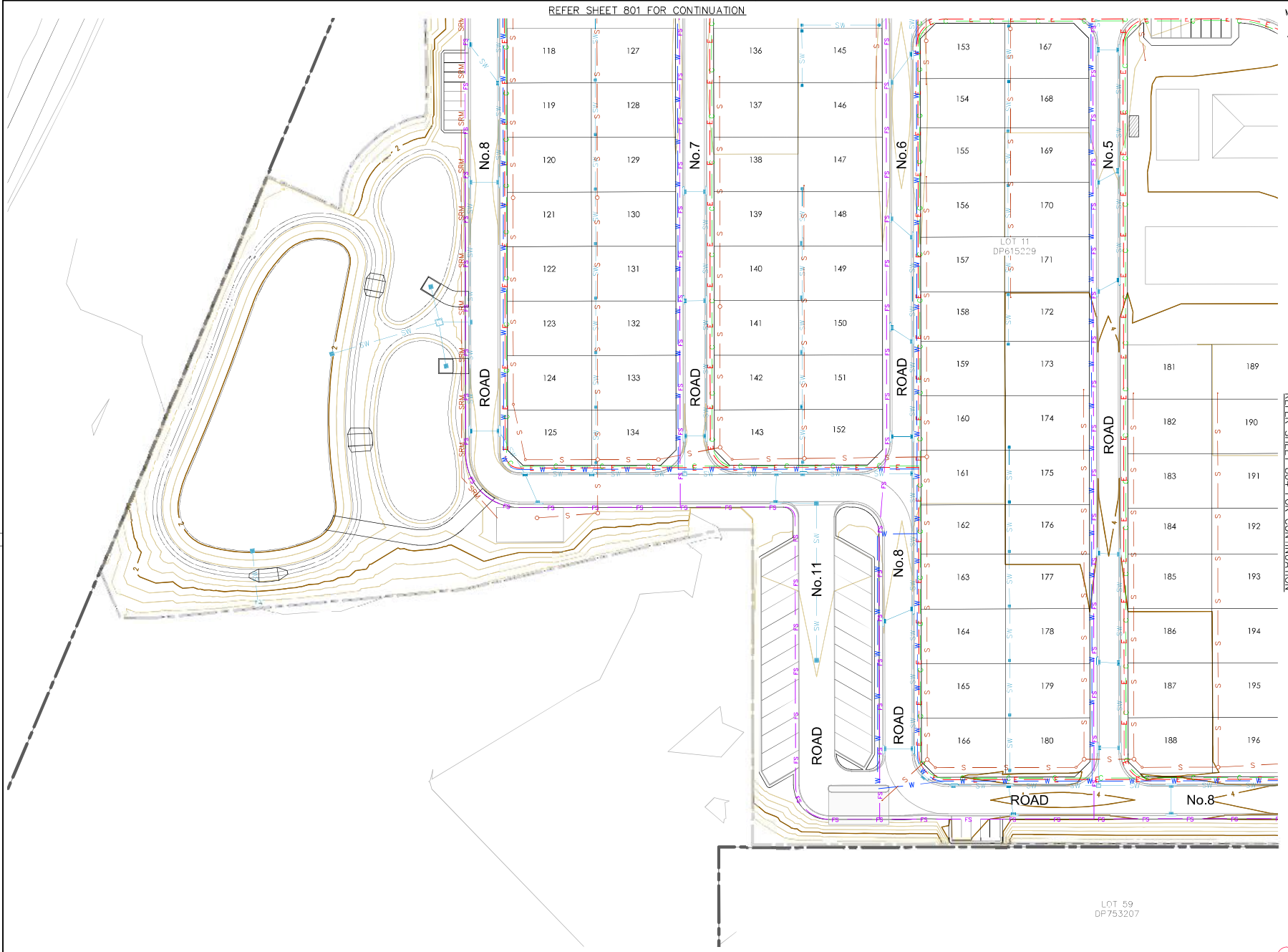
PLAN TITLE: COMBINED SERVICES PLAN SHEET 2

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	802	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:20PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-801-804.DWG

190835-S2-CENG-801-804

REFER SHEET 801 FOR CONTINUATION



REFER SHEET 804 FOR CONTINUATION

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
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- W PROPOSED WATER\FIRE
- FS PROPOSED WATER\FIRE
- E PROPOSED ELECTRICITY
- C PROPOSED COMMS
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- ex c EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

NOTE:

1. SERVICES LAYOUT IS INDICATIVE ONLY AND WILL BE AMENDED AT DETAILED DESIGN PHASE.

COMBINED SERVICES PLAN

SCALE 1:500

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A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500, A3 1:1000 (0, 12.5, 25.0m)

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: COMBINED SERVICES PLAN
SHEET 3

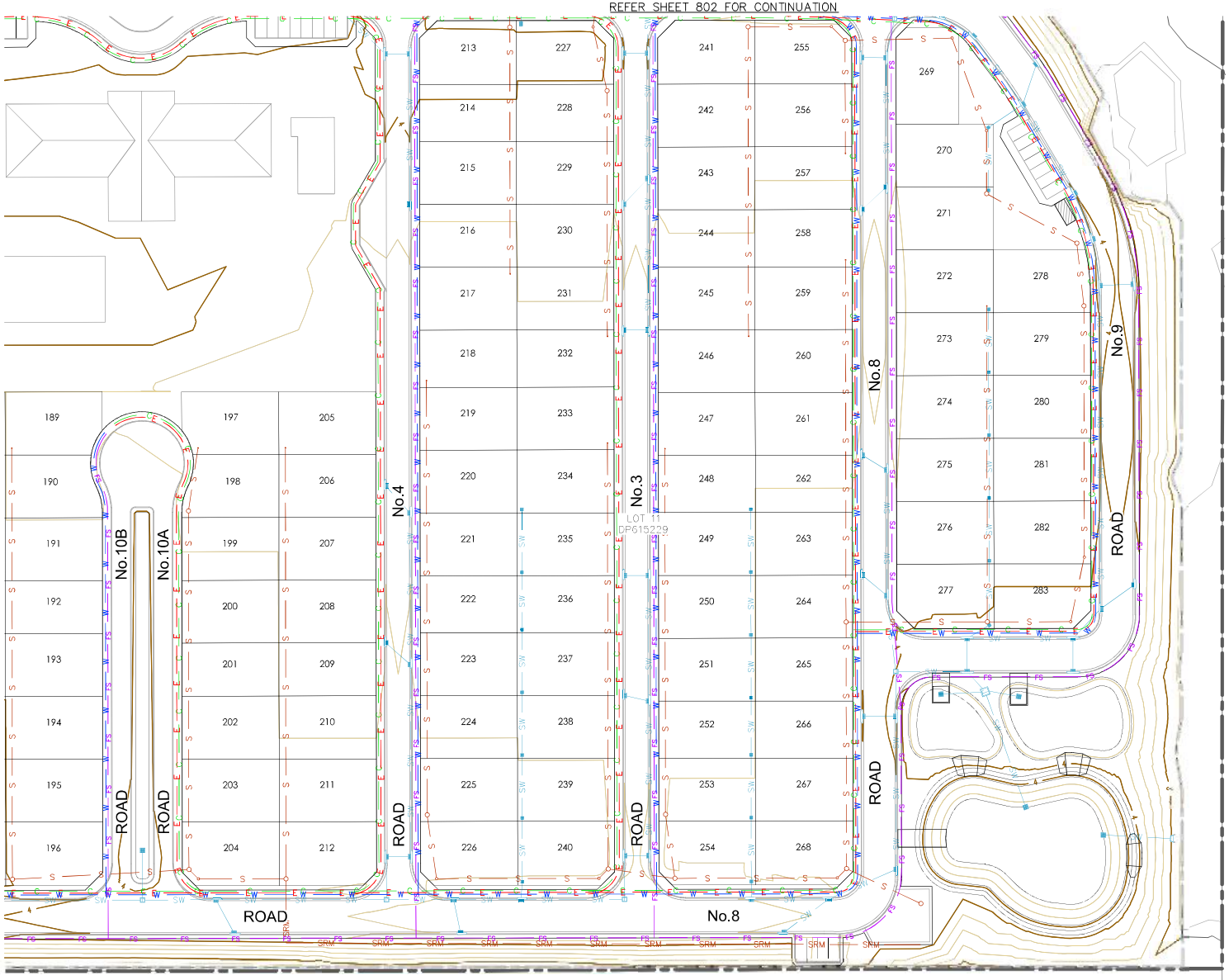
PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	803	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:21PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-801-804.DWG

190835-S2-CENG-801-804

REFER SHEET 802 FOR CONTINUATION

REFER SHEET 803 FOR CONTINUATION



M.G.A.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORKS BOUNDARY
- PROPOSED SITE BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR NATURAL CONTOURS
- MINOR NATURAL CONTOURS
- MAJOR DESIGN CONTOURS
- MINOR DESIGN CONTOURS
- PROPOSED KERB
- EXISTING KERB
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- W PROPOSED WATER\FIRE
- FS PROPOSED WATER\FIRE
- E PROPOSED ELECTRICITY
- C PROPOSED COMMS
- ex sw EXISTING STORMWATER
- ex s EXISTING SEWER
- ex w EXISTING WATER
- O/H EXISTING OVERHEAD POWER
- ex e EXISTING ELECTRICITY
- ex c EXISTING COMMS
- PROPOSED SW PIT
- PROPOSED LINTEL
- PROPOSED HEADWALL

CONTOUR INTERVAL = 0.5m

NOTE:

1. SERVICES LAYOUT IS INDICATIVE ONLY AND WILL BE AMENDED AT DETAILED DESIGN PHASE.

COMBINED SERVICES PLAN

SCALE 1:500

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REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	09.12.2024	INITIAL ISSUE	B.U.	L.K.	B.U.	J.Y.

SCALES: A1 1:500 — 0 12.5 25.0m — A3 1:1000

DESIGN FILE S:\190835\Design\12D\TUNCURRY MHE STG 2\TUNCURRY_MHE_STG_2.project

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40-80, 82 CHAPMANS ROAD
TUNCURRY

SURVEYED: ADW Johnson

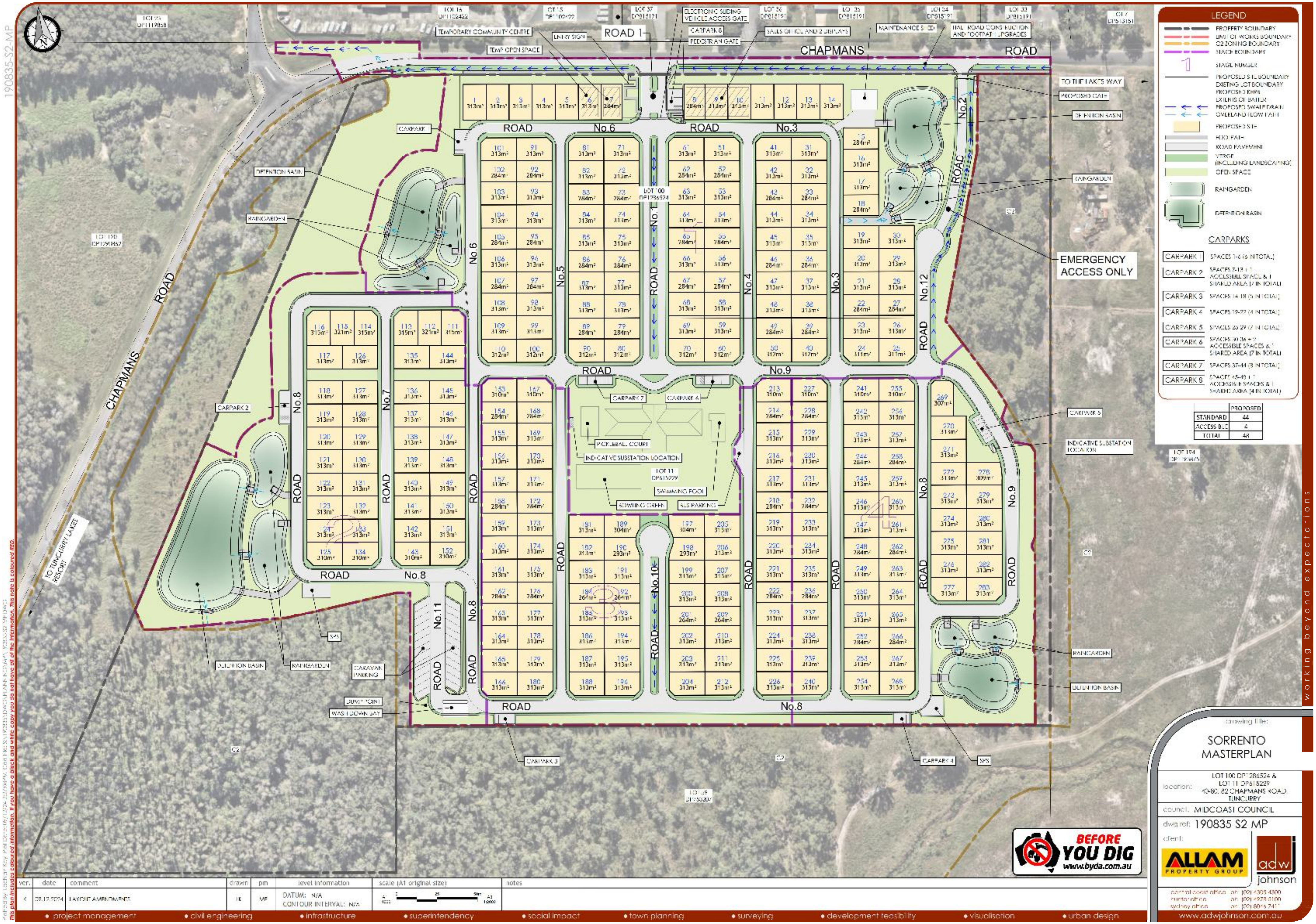
DATUM: GDA2020 M.G.A. ZONE 56 A.H.D.

PROJECT: PROPOSED MANUFACTURED HOME ESTATE

PLAN TITLE: COMBINED SERVICES PLAN
SHEET 4

PROJECT No.	PREFIX	DISCIPLINE	NUMBER	REV.
190835	S2	CENG	804	A

Plotted By: Lachlan Kay Plot Date: 09/12/24 2:34:23PM Cad File: S:\190835\DWG\ENGINEERING\CENG S2\190835-S2-CENG-801-804.DWG



LEGEND
CARPARKS
CARPARK 1 SPACES 1-6 (6 IN TOTAL)
CARPARK 3 SPACES 14-18 (5 IN TOTAL)
CARPARK 4 SPACES 19-22 (4 IN TOTAL)
CARPARK 7 SPACES 37-44 (8 IN TOTAL)
PROPOSED
STANDARD 44
ACCESS BLE 4
TOTAL 48
CHAPMANS ROAD
ROAD 1
ROAD No.2
ROAD No.3
ROAD No.4
ROAD No.5
ROAD No.6
ROAD No.7
ROAD No.8
ROAD No.9
ROAD No.10
ROAD No.11
ROAD No.12
TEMPORARY COMMUNITY CENTRE
TEMP OPEN SPACE
ENTRY SIGN
CARPARK 8
PEDESTRIAN GATE
SALES OFFICE AND 2 DISPLAYS
MAINTENANCE SHED
TO THE LAKES WAY
PROPOSED GATE
DETENTION BASIN
RAINGARDEN
EMERGENCY ACCESS ONLY
CARPARK 2
CARPARK 5
CARPARK 6
CARPARK 7
PICKLEBALL COURT
INDICATIVE SUBSTATION LOCATION
SWIMMING POOL
BOWLING GREEN
SPS
CARAVAN PARKING
DUMP POINT
WASH DOWN BAY
CARPARK 3
CARPARK 4
TO TUNCURRY LAKES RESORT
BEFORE YOU DIG
www.byda.com.au
drawing title:
SORRENTO MASTERPLAN
location: LOT 100 DP1286524 & LOT 11 DP615229 40-80, 82 CHAPMANS ROAD TUNCURRY
council: MIDCOAST COUNCIL
dwg ref: 190835 S2 MP
client: ALLAM PROPERTY GROUP
adw johnson
www.adwjohnson.com.au
working beyond expectations
ver. | date | comment | drawn | pm | level information | scale (A1 original size) | notes
C | 09.12.2024 | LAYOUT AMENDMENTS | IK | MF | DATUM: N/A CONTOUR INTERVAL: N/A
• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

Appendix B

About this Report

About this Report

October 2024

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix C

RGS Bore Logs (MW1 to MW4)

Douglas Bore Logs (101 to 105) (219536.00 and 219536.01)

Slug Test Analysis Report Sheets (MW1, MW3, MW4 and 101 to 104)

Double Ring Infiltrometer Test Sheets (201 to 212)

Figure 1 – Groundwater Level vs Rainfall (MW1, MW3, MW4 and 105)

Figure 2 – Groundwater Level vs Rainfall (101 to 104)

REGIONAL GEOTECHNICAL SOLUTIONS

ENGINEERING LOG - BOREHOLE

BOREHOLE NO: MW1

CLIENT: Allam Property Group
PAGE: 1 of 1
PROJECT NAME: Proposed MHE
JOB NO: RGS03137.1
SITE LOCATION: 40-80 Chapmans Road, Tuncurry
LOGGED BY: APH
TEST LOCATION: See Figure 3
DATE: 7/10/22

DRILL TYPE: 6T Kubota Excavator
EASTING:
SURFACE RL:
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
NORTHING:
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	7/10/2022			0.2		SC	**TOPSOIL:** Clayey SAND, fine to medium grained, dark grey/black, clay, low plasticity, some roots	M				TOPSOIL
							0.20m					
				0.4		SP	**SAND:** Fine to medium grained, grey/pale grey					AEOLIAN
				0.6								
				0.8								
				1.0								
				1.2								
				1.4								
				1.6								
				1.8								
							2.00m Hole Terminated at 2.00 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample
ASS	Acid Sulfate Soil Sample
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

REGIONAL GEOTECHNICAL SOLUTIONS

ENGINEERING LOG - BOREHOLE

BOREHOLE NO: MW2

CLIENT: Allam Property Group
PAGE: 1 of 1
PROJECT NAME: Proposed MHE
JOB NO: RGS03137.1
SITE LOCATION: 40-80 Chapmans Road, Tuncurry
LOGGED BY: APH
TEST LOCATION: See Figure 3
DATE: 7/10/22

DRILL TYPE: 6T Kubota Excavator
EASTING:
SURFACE RL:
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
NORTHING:
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	7/10/2022			0.2		SC	**TOPSOIL:** Clayey SAND, fine to medium grained, dark grey/black, clay, low plasticity, some roots	M				TOPSOIL
				0.4		SC	**Clayey SAND:** Fine to coarse grained, brown/dark brown, clay, low plasticity, trace roots					LIGHTLY INDURATED SAND
				0.6								
				0.8								
				1.0		SP	**SAND:** Fine to medium grained, grey/pale grey/pale brown	W				AEOLIAN
				1.2								
				1.4								
				1.6								
				1.8								
				2.00m			Hole Terminated at 2.00 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample
ASS	Acid Sulfate Soil Sample
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density		
	V	Very Loose
	L	Loose
	MD	Medium Dense
	D	Dense
	VD	Very Dense

Density Index
<15%
15 - 35%
35 - 65%
65 - 85%
85 - 100%

Moisture Condition	
D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

REGIONAL GEOTECHNICAL SOLUTIONS

ENGINEERING LOG - BOREHOLE

BOREHOLE NO: MW3

CLIENT: Allam Property Group
PAGE: 1 of 1
PROJECT NAME: Proposed MHE
JOB NO: RGS03137.1
SITE LOCATION: 40-80 Chapmans Road, Tuncurry
LOGGED BY: APH
TEST LOCATION: See Figure 3
DATE: 7/10/22

DRILL TYPE: 6T Kubota Excavator
EASTING:
SURFACE RL:
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
NORTHING:
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	7/10/2022			0.2		CL	**TOPSOIL:** Silty CLAY, low plasticity, dark grey/black, some sand, fine to medium grained, some roots	M				TOPSOIL
				0.4		SC	**Clayey SAND:** Fine to coarse grained, pale grey/pale brown, clay, low plasticity, some roots					ALLUVIAL SOIL
				0.6								
				0.8								
				1.0								
				1.2								
				1.4								
				1.6								
				1.8								
				2.00m			Hole Terminated at 2.00 m					

0.25m

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample
ASS	Acid Sulfate Soil Sample
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

REGIONAL GEOTECHNICAL SOLUTIONS

ENGINEERING LOG - BOREHOLE

BOREHOLE NO: MW4

CLIENT: Allam Property Group
PAGE: 1 of 1
PROJECT NAME: Proposed MHE
JOB NO: RGS03137.1
SITE LOCATION: 40-80 Chapmans Road, Tuncurry
LOGGED BY: APH
TEST LOCATION: See Figure 3
DATE: 7/10/22

DRILL TYPE: 6T Kubota Excavator
EASTING:
SURFACE RL:
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
NORTHING:
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	▽ 7/10/2022			0.2 0.4		SC	**FILL:** Clayey SAND, fine to medium grained, dark grey/black, clay, low plasticity, some roots	M				FILL/TOPSOIL
				0.6		SC	0.50m **TOPSOIL:** Clayey SAND, fine to medium grained, dark grey/black, some roots					TOPSOIL
				0.8 1.0 1.2		SC	0.70m **Clayey SAND:** Fine to coarse grained, brown/pale brown, clay, low plasticity	W				LIGHTLY INDURATED SAND
				1.4 1.6 1.8		SC	1.20m **Clayey SAND:** Fine to coarse grained, pale grey/pale brown, clay, low plasticity					ALLUVIAL SOIL
							2.00m Hole Terminated at 2.00 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample
ASS	Acid Sulfate Soil Sample
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Home Estate
LOCATION: 82 Chapmans Road, Tuncurry

SURFACE LEVEL: 1.8 AHD
COORDINATE **E:**451334.1 **N:** 6441896.8
DATUM/GRID: GDA94
DIP/AZIMUTH: 90°/---

LOCATION ID: 101
PROJECT No: 219536.01
DATE: 29/06/23
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*)	DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS	BACKFILL	WELL PIPE
Free groundwater observed at 1.2m	1.8	0.0	TOPSOIL/ (SP) Silty SAND; dark brown; fine to medium; with rootlets		TOP					D		0.0			Bentonite	50mm Diameter Class 18 PVC (0.78m stick up)
		0.1	(SP) Silty SAND; dark brown; fine to medium		ALV	NA		M				0.1				
										D		0.4			2mm Sand	
		0.5	(SP) SAND, with silt; brown; fine to medium							D		0.6				
	1	1			ALV	NA		M		D		1.0				
										B		1.3				
		1.4	(SP) SAND; pale brown; fine to medium							D		1.5				
	0	2			ALV	NA		W		D		2.0				50mm Diameter Class 18 PVC Machine Slotted
										D		2.5				
	-1	2.75	Borehole discontinued at 2.75m depth Limit of investigation													

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 100mm Solid Flight Auger 0m to 2.75m
REMARKS:

OPERATOR: Traccess (Scott Kennedy)
CASING: Uncased

LOGGED: Helbig

EXPORTED 09/08/23 11:45. TEMPLATE ID: DP_101.02.00_SOILLOG

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Home Estate
LOCATION: 82 Chapmans Road, Tuncurry

SURFACE LEVEL: 1.8 AHD
COORDINATE **E:**451166.6 **N:** 6441792.5
DATUM/GRID: GDA94
DIP/AZIMUTH: 90°/---

LOCATION ID: 102
PROJECT No: 219536.01
DATE: 29/06/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS		
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL / WELL PIPE
Free groundwater observed at 1.1m	0.0 / 1.8	(SP) SAND, trace silt; brown; fine to medium		ALV	NA	M		D		0.0			Bentonite; 50mm Diameter Class 18 PVC (0.71m stick up)
								D		0.1			
								D		0.5			2mm Sand; 50mm Diameter Class 18 PVC Machine Slotted
								B		0.8			
	1 / 1							D		1.0			
	0 / 2					W		D		1.5			
								D		2.0			
	-1 / 2.75	Borehole discontinued at 2.75m depth Limit of investigation						D		2.5			

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 100mm Solid Flight Auger 0m to 2.75m
REMARKS:

OPERATOR: Traccess (Scott Kennedy)
CASING: Uncased

LOGGED: Helbig

EXPORTED 09/08/23 11:45. TEMPLATE ID: DP_101.02.00_SOILLOG

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Home Estate
LOCATION: 82 Chapmans Road, Tuncurry

SURFACE LEVEL: .7 AHD
COORDINATE **E:**450939.5 **N:** 6442075.1
DATUM/GRID: GDA94
DIP/AZIMUTH: 90°/---

LOCATION ID: 103
PROJECT No: 219536.01
DATE: 29/06/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS		
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
Free groundwater observed at 1.0m	0.0	TOPSOIL/ (ML) Sandy SILT; dark brown; low plasticity; with rootlets		TOP	NA	>PL		D		0.0			Bentonite	50mm Diameter Class 18 PVC (0.78m stick up)
	0.2	(SP) SAND; pale brown; fine to medium								0.1				
										0.3				
								B						
								D		0.5				
						M				0.6				
	0													
	1							D		1.0				
				ALV	NA								2mm Sand	50mm Diameter Class 18 PVC Machine Slotted
	-1							D		1.5				
						W								
	2							D		2.0				
								D		2.5				
	-2													
	2.75	Borehole discontinued at 2.75m depth Limit of investigation												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 100mm Solid Flight Auger 0m to 2.75m
REMARKS:

OPERATOR: Traccess (Scott Kennedy)
CASING: Uncased

LOGGED: Helbig

EXPORTED 09/08/23 11:45. TEMPLATE ID: DP_101.02.00_SOILLOG

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Home Estate
LOCATION: 82 Chapmans Road, Tuncurry

SURFACE LEVEL: .6 AHD
COORDINATE **E:**450849.2 **N:** 6441931.7
DATUM/GRID: GDA94
DIP/AZIMUTH: 90°/---

LOCATION ID: 104
PROJECT No: 219536.01
DATE: 29/06/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS		
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
Free groundwater observed at 1.0m	0.0	TOPSOIL/ (ML) Sandy SILT; dark brown; low plasticity; with rootlets		TOP	NA	>PL		D		0.0 – 0.1			Bentonite	50mm Diameter Class 18 PVC (0.74m stick up)
	0.2	(SP) SAND; pale brown; fine to medium				M		D		0.5			2mm Sand	50mm Diameter Class 18 PVC Machine Slotted
								B		0.8				
	1			ALV	NA			D		1.0				
								D		1.5				
						W		D		2.0				
		2.5m: pale grey						D		2.5				
	2.75	Borehole discontinued at 2.75m depth Limit of investigation												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 100mm Solid Flight Auger 0m to 2.75m
REMARKS:

OPERATOR: Traccess (Scott Kennedy)
CASING: Uncased

LOGGED: Helbig

EXPORTED 09/08/23 11:45. TEMPLATE ID: DP_101.02.00_SOILLOG

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.8 AHD
COORDINATE: E:451382.0, N:6442118.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 105
PROJECT No: 219536.00
DATE: 13/08/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 2.1 AHD
COORDINATE: E:451309.4, N:6442111.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 201
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
30/11/23 No free groundwater observed	2	FILL / Silty SAND (SP): dark brown; fine to medium; trace shell, gravel, plastic.		FILL	ND	M						
	0.25	FILL / SAND (SP), trace gravel: brown; fine to medium; fine, sub-angular gravel.		FILL	ND	D		B		0.50		
	1.00	Silty SAND (SP): dark grey; fine to medium; trace sulfur odour.			ND	M				1.00		
	1	Borehole discontinued at 1.50m depth. Limit of investigation.										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 1.5m
REMARKS: DRI @ 0.5m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.5 AHD
COORDINATE: E:451256.7, N:6441974.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 202
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.15	Silty SAND (SP): dark grey; fine to medium; with rootlets.			ND	M						
		SAND (SP), with silt: grey; fine to medium.						B		0.20 – 0.40		
		From 0.40m: brown			ND	M						
▼ 30/11/23												
Free groundwater observed at 0.9m	1.00	Borehole discontinued at 1.00m depth. Limit of investigation.				W						

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 1.0m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.7 AHD
COORDINATE: E:451237.6, N:6441826.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 203
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0	Silty SAND (SP): grey; fine to medium; with rootlets.			ND	M						
	0.15	SAND (SP): pale grey; fine to medium.			ND	M		B		0.20 – 0.50		
▼ 30/11/23	0.70	Silty SAND (SP): dark grey; fine to medium.			ND	W						
Free groundwater observed at 0.8m	1	Borehole discontinued at 0.90m depth. Limit of investigation.								1		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.9m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.1 AHD
COORDINATE: E:451081.7, N:6441812.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 204
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	1	Silty SAND (SP): dark grey; fine to medium; with rootlets.			ND	M						
	0.10	SAND (SP): brown; fine to medium; trace rootlets.				M				0.10		
▼ 30/11/23 Free groundwater observed at 0.3m					ND			B				
						W				0.50		
		Borehole discontinued at 0.60m depth. Limit of investigation.										
	1									1		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.6m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.0 AHD
COORDINATE: E:451083.7, N:6441909.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 205
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE		REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	1	Silty SAND (SP): dark grey; fine to medium; with rootlets, roots.			ND	M							
	0.15	SAND (SP): brown; fine to medium.			ND	M							
						W							
	0	Borehole discontinued at 0.50m depth. Limit of investigation.									1		
	1												

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.5m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners
LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 1.3 AHD
COORDINATE: E:451180.9, N:6441968.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 206
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.10	Silty SAND (SP): dark grey; fine to medium; with rootlets.			ND	M						
		SAND (SP): brown; fine to medium.			ND	M		B		0.30		
▼ 30/11/23 Free groundwater observed at 0.6m						W				0.60		
		Borehole discontinued at 0.70m depth. Limit of investigation.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.7m
REMARKS: DRI @ 0.3m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 2.1 AHD
COORDINATE: E:451140.6, N:6442038.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 207
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
30/11/23 No free groundwater observed	2	FILL / SAND (SP), trace gravel: brown; fine to medium; fine, sub-angular gravel; trace rootlets.		FILL	ND	D		B		0.10		
		From 0.70m: increased gravel content								0.50		
	1	Borehole discontinued at 0.90m depth. Refusal on gravel.								1		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.9m
REMARKS: DRI @ 0.1m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 2.9 AHD
COORDINATE: E:451191.8, N:6442104.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 208
PROJECT No: 219536.00
DATE: 30/11/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
30/11/23 No free groundwater observed		FILL / SAND (SP): pale brown; fine to medium; trace shell, rootlets. From 0.10m: no rootlets		FILL	ND	D		B		0.20 0.40		
		Borehole discontinued at 0.40m depth. Collapse.										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.4m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 2.7 AHD
COORDINATE: E:451309.5, N:6442104.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 209
PROJECT No: 219536.00
DATE: 01/12/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
01/12/23 No free groundwater observed		FILL / SAND (SP): pale brown; fine to medium; trace shell, gravel.		FILL	ND	D		B				
		Borehole discontinued at 0.30m depth. Collapse.								0.30		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.3m
REMARKS: DRI @ 0.0m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners
LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log - 19/12/2023 9:25:43 AM

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 2.3 AHD
COORDINATE: E:451276.9, N:6442105.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 210
PROJECT No: 219536.00
DATE: 01/12/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
01/12/23 No free groundwater observed	2.3 / 0.00	FILL / Silty SAND (SP): brown; fine to medium; trace rootlets, wood, metal, shell.		FILL	ND	D						
	2.2 / 0.10	FILL / SAND (SP), with silt: pale brown pale grey; fine to medium; trace shell.										
		From 0.60m: pale brown, trace silt		FILL	ND	D						
	1.1 / 1.20	Borehole discontinued at 1.20m depth. Limit of investigation.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 1.2m
REMARKS: DRI @ 0.2m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 0.7 AHD
COORDINATE: E:450974.5, N:6442099.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 211
PROJECT No: 219536.00
DATE: 01/12/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0	Clayey SAND (SC): dark grey; fine to medium; with rootlets.			ND	M						
	0.20	Clayey SAND (SC): brown; fine to medium; trace rootlets.				M						
▼ 01/12/23 Free groundwater observed at 0.35m					ND	W						
	0.60	SAND (SP): pale brown; fine to medium.			ND							
	-1	Borehole discontinued at 0.70m depth. Limit of investigation.										
	1									1		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.7m
REMARKS: DRI @ 0.3m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

BOREHOLE LOG

CLIENT: Allam Property Group
PROJECT: Proposed Manufactured Housing Estate
LOCATION: 40-80 Chapmans Road, Tuncurry, NSW

SURFACE LEVEL: 0.8 AHD
COORDINATE: E:450943.9, N:6442013.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 212
PROJECT No: 219536.00
DATE: 01/12/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.20	Clayey SAND (SC): dark grey; fine to medium; with rootlets.			ND	M						
▼ 01/12/23		Clayey SAND (SC): black; fine to medium; trace rootlets.			ND	M						
Free groundwater observed at 0.35m						W						
		Borehole discontinued at 0.40m depth. Limit of investigation.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hand Auger
METHOD: Hand auger to 0.4m
REMARKS: DRI @ 0.3m. Coordinates and elevations measured by dGPS with typical accuracy of ±0.1m.

OPERATOR: Douglas Partners

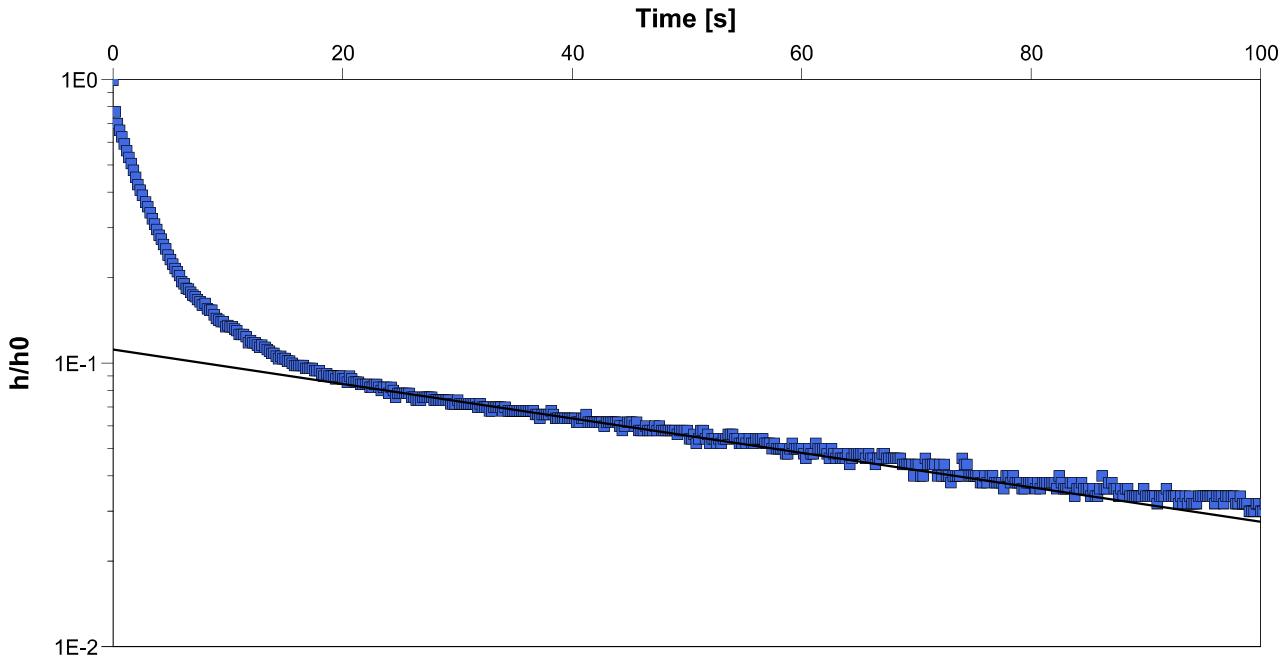
LOGGED: Lambert
CASING: Nil

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW1-1	Test Well: MW1
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW1-1	Analysis Date: 11/05/2023
Aquifer Thickness:		

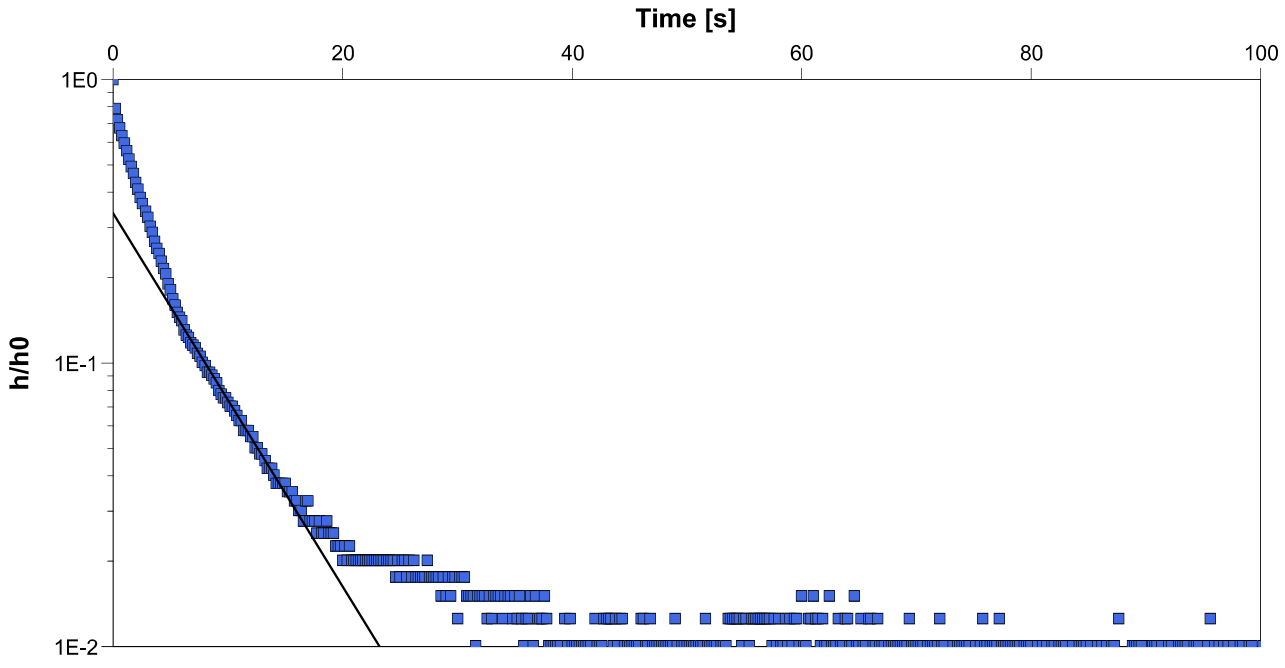


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW1	1.20×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW1-2	Test Well: MW1
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW1-2	Analysis Date: 11/05/2023
Aquifer Thickness:		

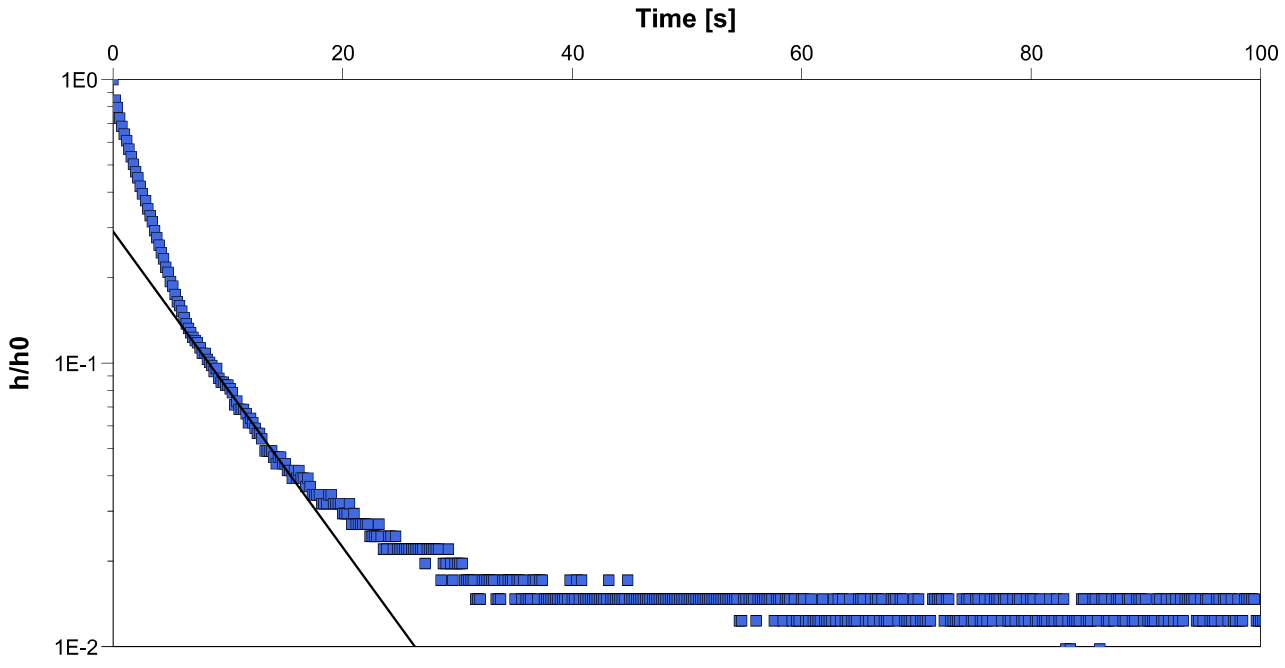


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW1	1.30×10^{-4}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW1-3	Test Well: MW1
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW1-3	Analysis Date: 11/05/2023
Aquifer Thickness:		

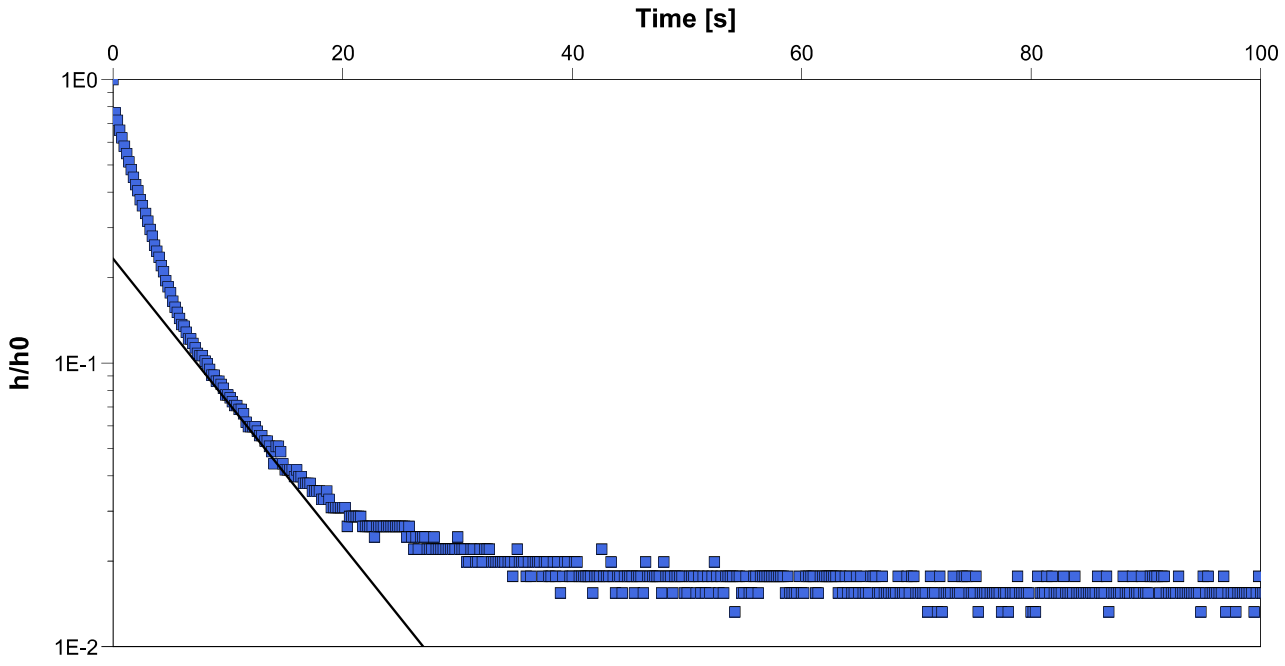


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW1	1.10×10^{-4}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW1-4	Test Well: MW1
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW1-4	Analysis Date: 11/05/2023
Aquifer Thickness:		

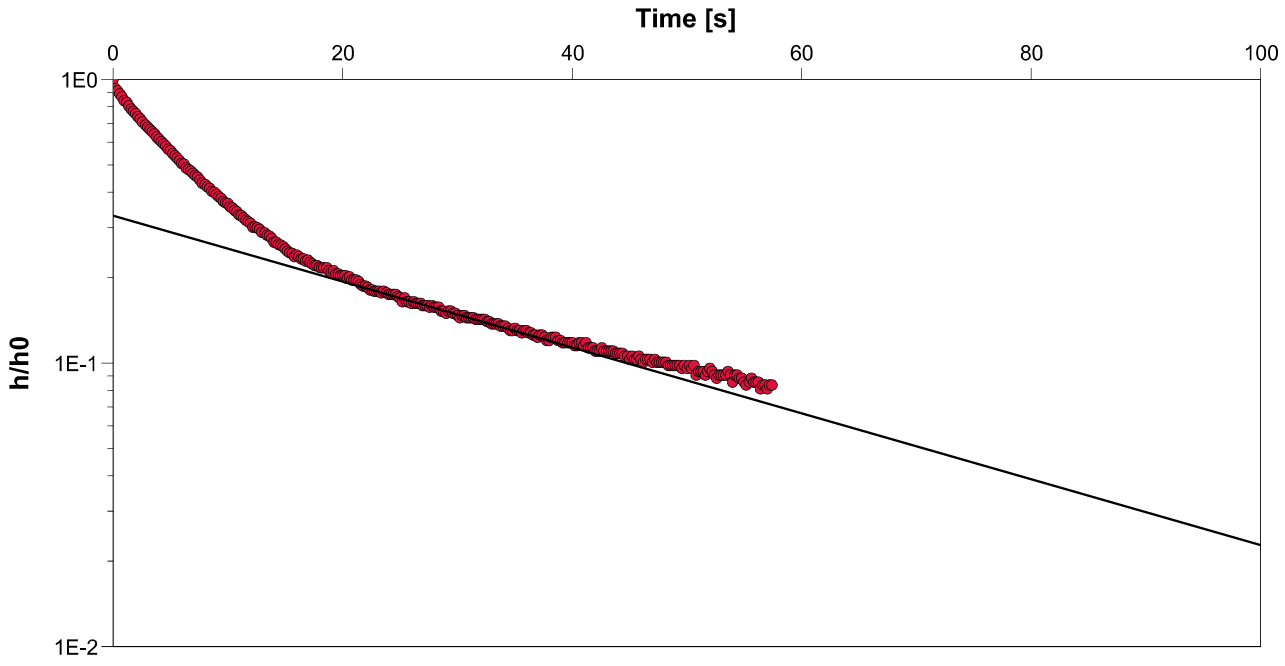


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW1	1.00×10^{-4}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW3-1	Test Well: MW3
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW3-1	Analysis Date: 11/05/2023
Aquifer Thickness:		

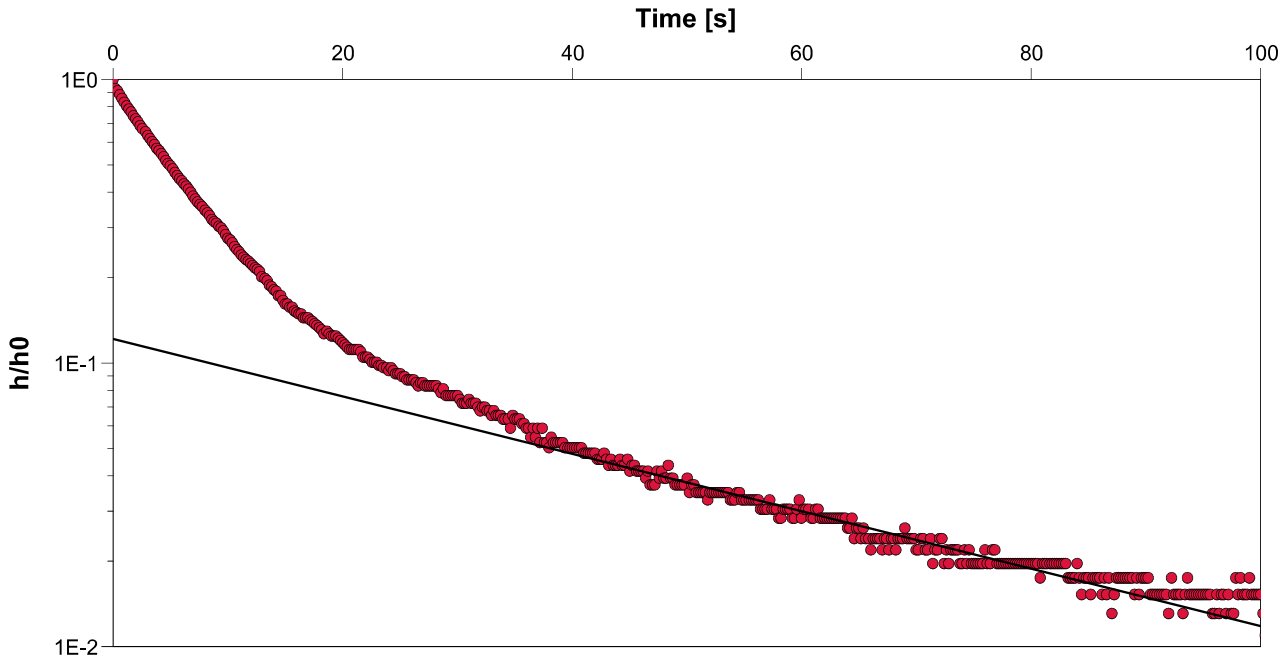


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW3	2.30×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW3-2	Test Well: MW3
Test Conducted by:		Test Date: 11/05/2023
Analysis Performed by: JCL	MW3-2	Analysis Date: 11/05/2023
Aquifer Thickness:		

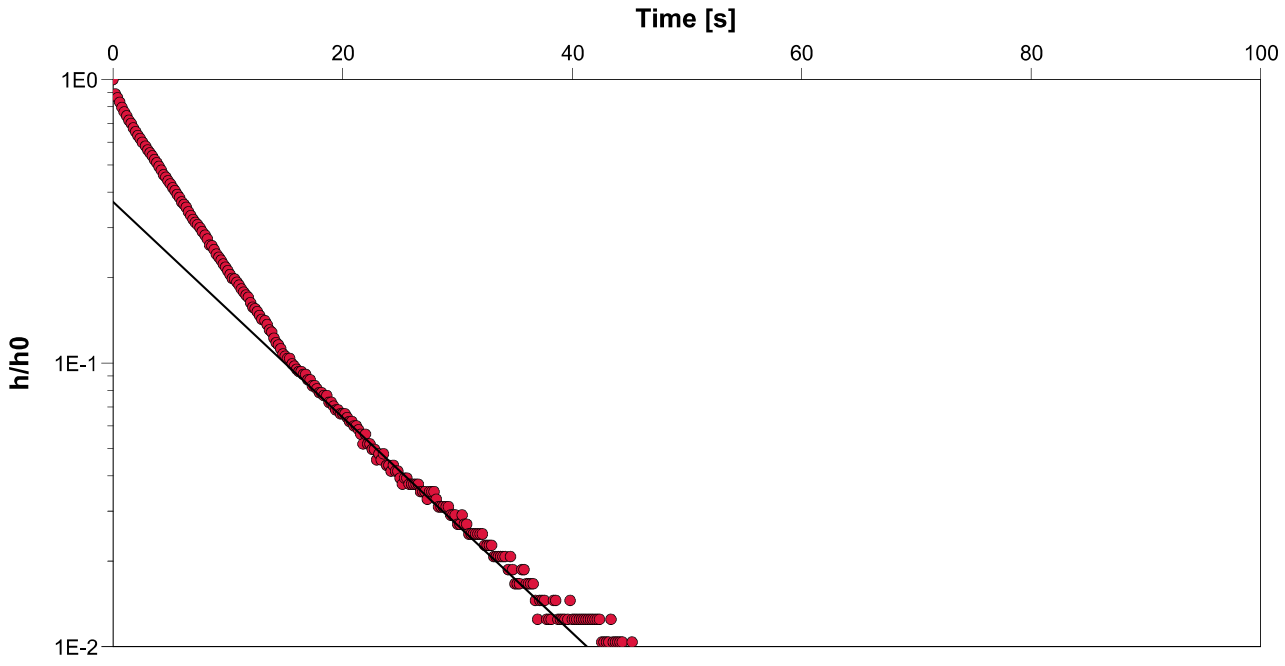


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW3	2.00×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW3-3	Test Well: MW3
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW3-3	Analysis Date: 11/05/2023
Aquifer Thickness:		

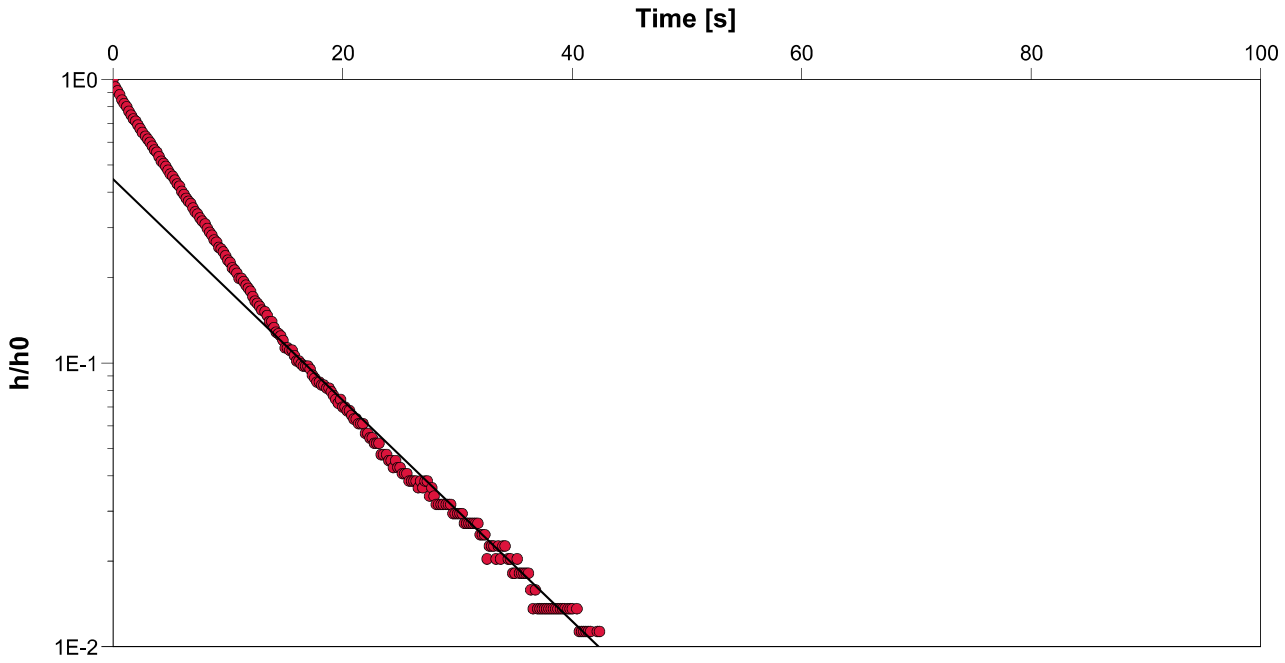


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW3	7.50×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW3-4	Test Well: MW3
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW3-4	Analysis Date: 11/05/2023
Aquifer Thickness:		

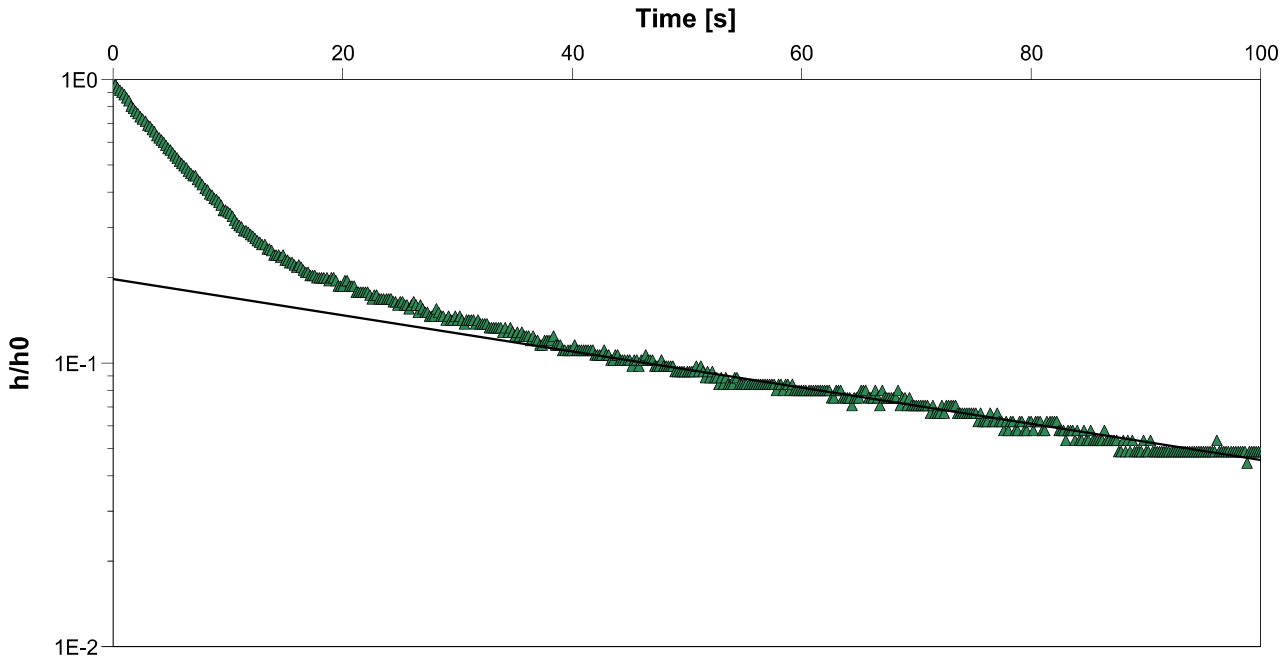


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW3	7.70×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-1	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-1	Analysis Date: 11/05/2023
Aquifer Thickness:		

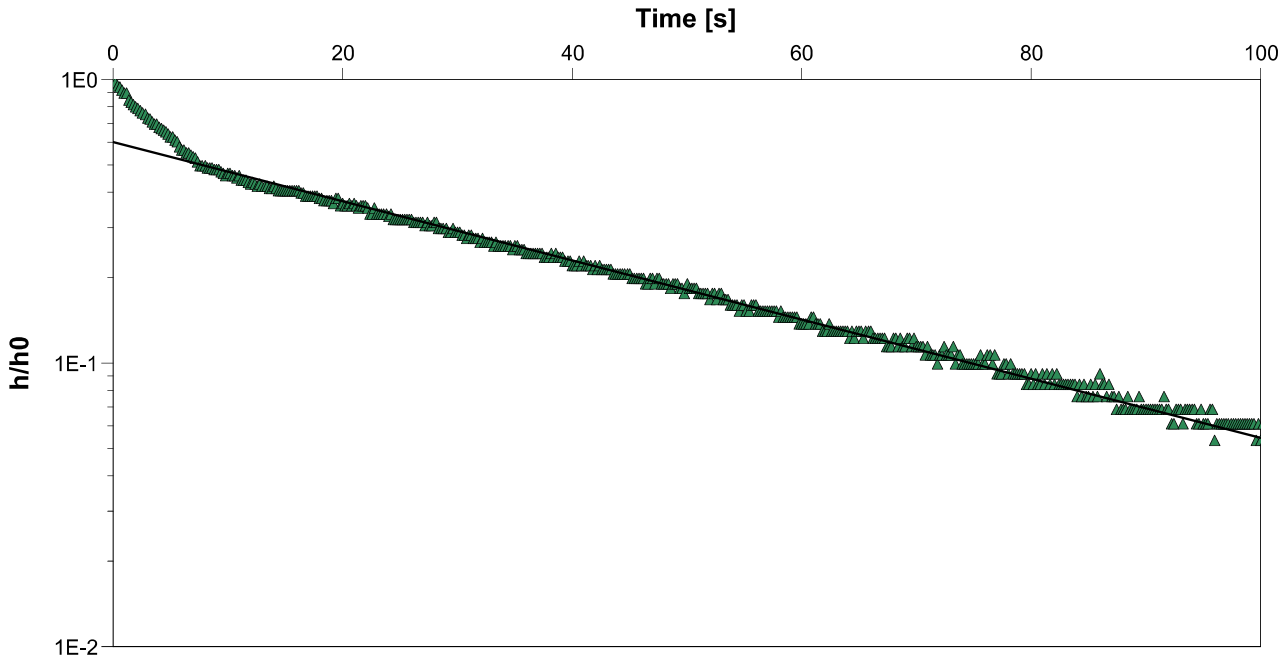


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	3.30×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-2	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-2	Analysis Date: 2/05/2023
Aquifer Thickness:		

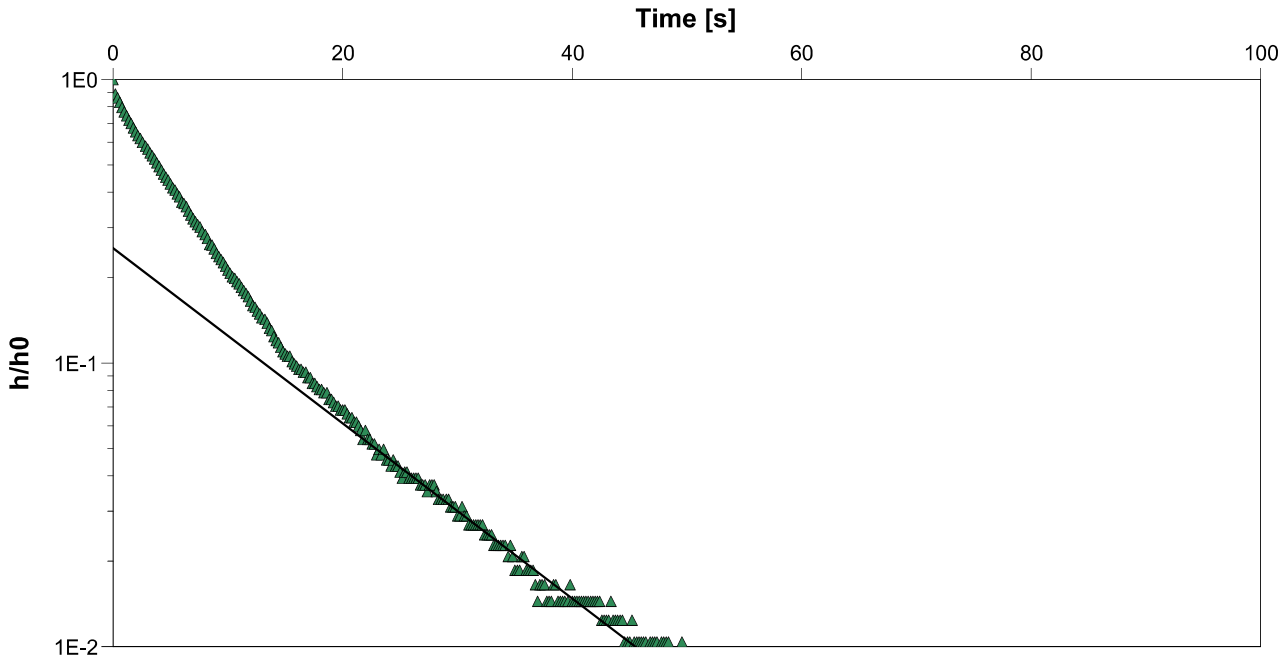


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	5.40×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-3	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-3	Analysis Date: 11/05/2023
Aquifer Thickness:		

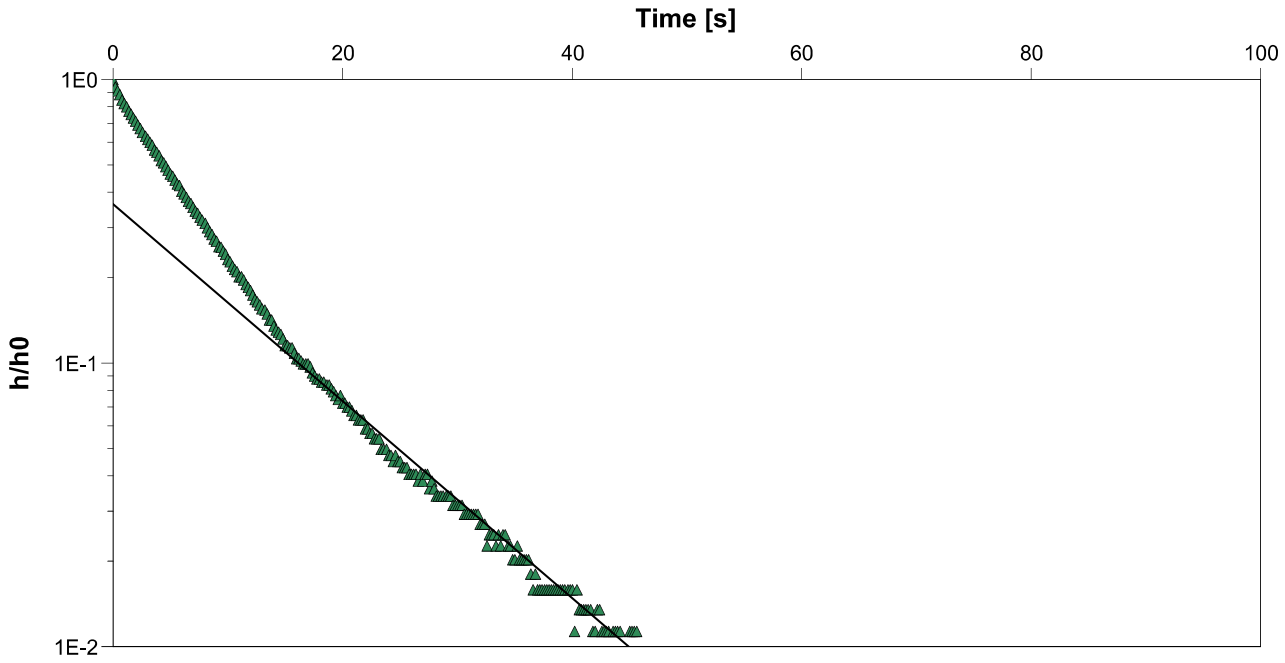


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	1.60×10^{-4}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-4	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-4	Analysis Date: 11/05/2023
Aquifer Thickness:		

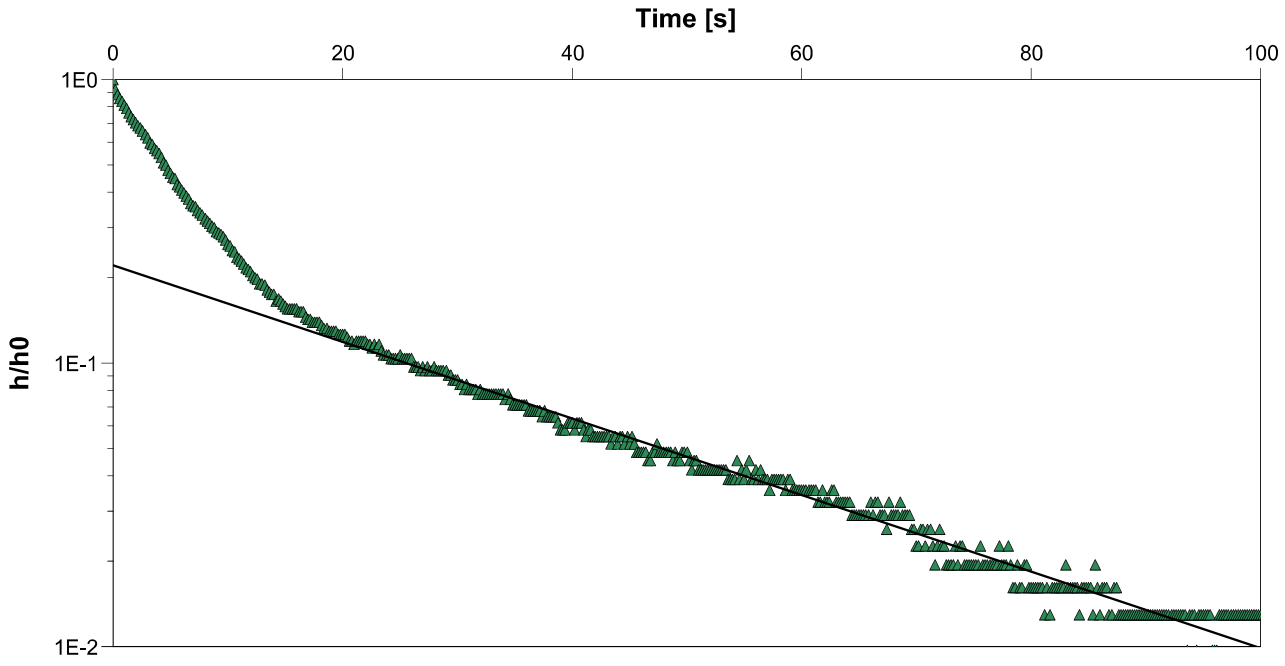


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	1.80×10^{-4}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-6	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-6	Analysis Date: 11/05/2023
Aquifer Thickness:		

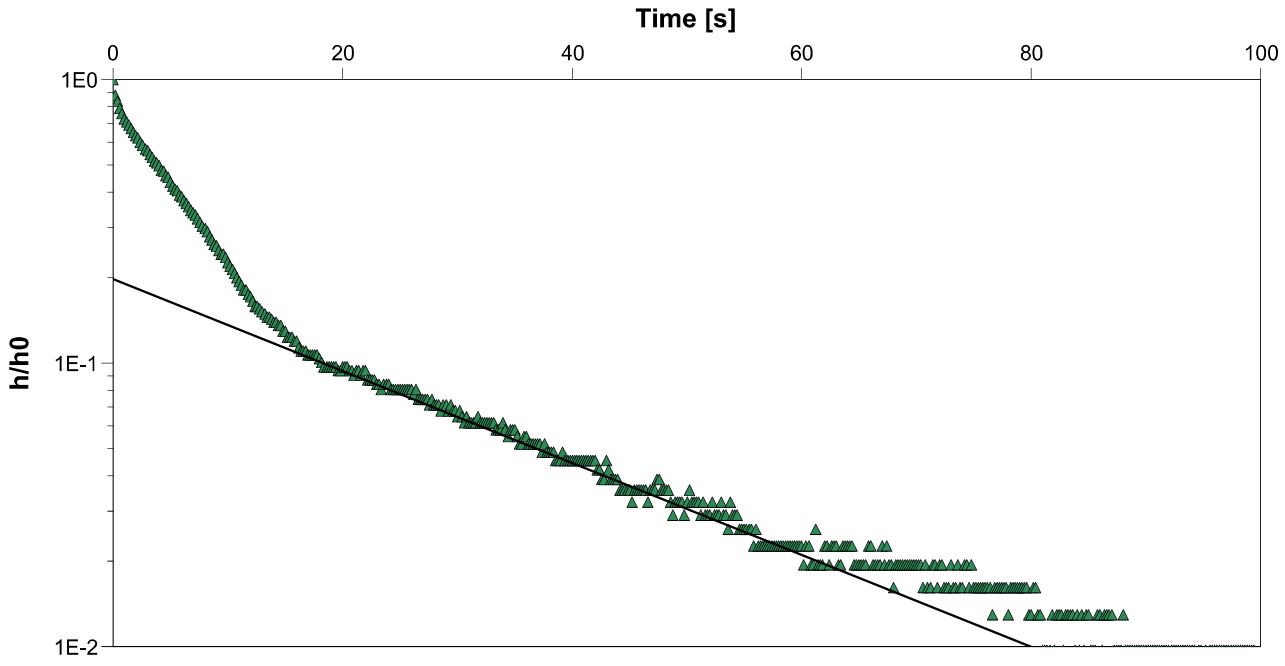


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	7.00×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-7	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-7	Analysis Date: 11/05/2023
Aquifer Thickness:		

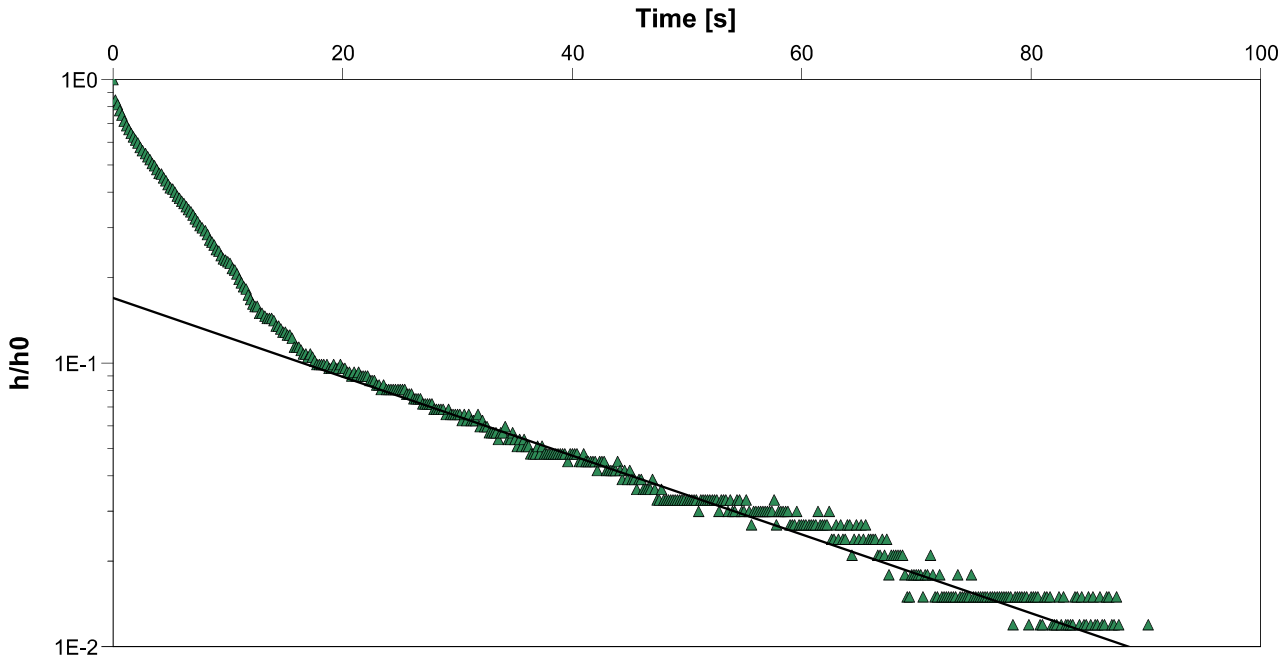


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	8.40×10^{-5}	

Douglas PARTNERS GROUNDED EXPERTISE	**Slug Test Analysis Report**
	Project: Proposed Manufactured Housing Estate
	Number: 219536.00
	Client: Allam Property Group

Location: 40-80 Chapmans Road, TUNCURRY	Slug Test: MW4-8	Test Well: MW4
Test Conducted by: JCL		Test Date: 2/05/2023
Analysis Performed by: JCL	MW4-8	Analysis Date: 11/05/2023
Aquifer Thickness:		

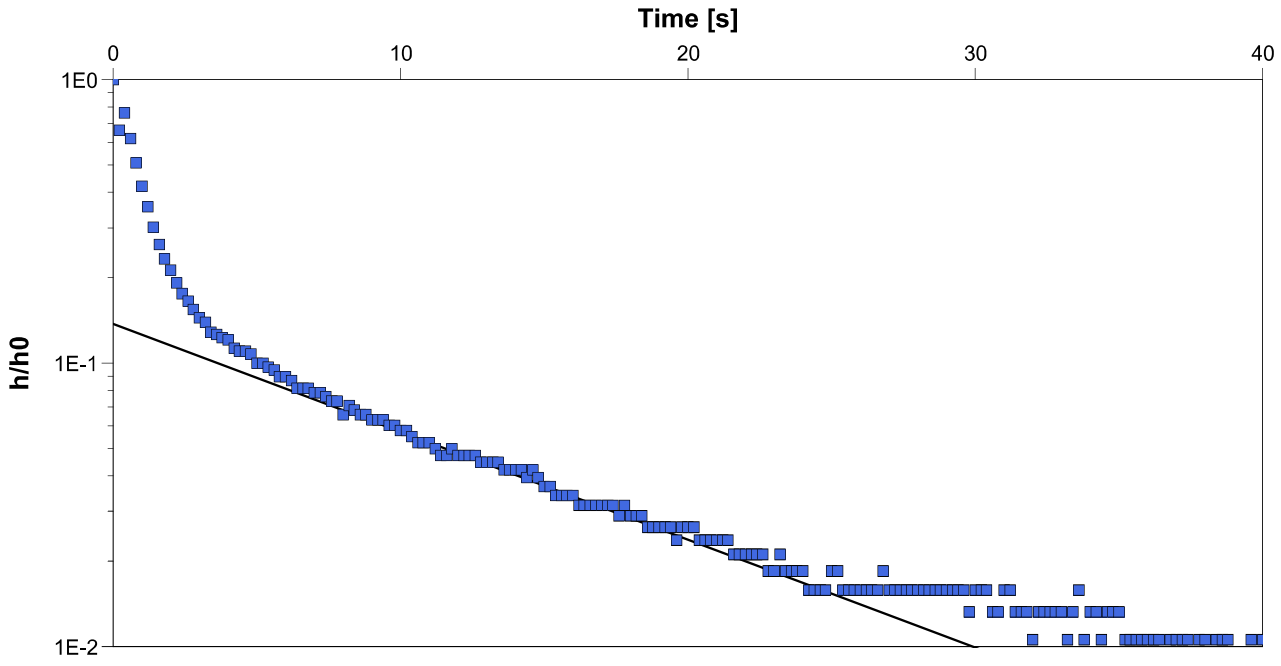


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
MW4	7.20×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 101-1	Test Well: 101
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	101-1	Analysis Date: 7/07/2023
Aquifer Thickness:		

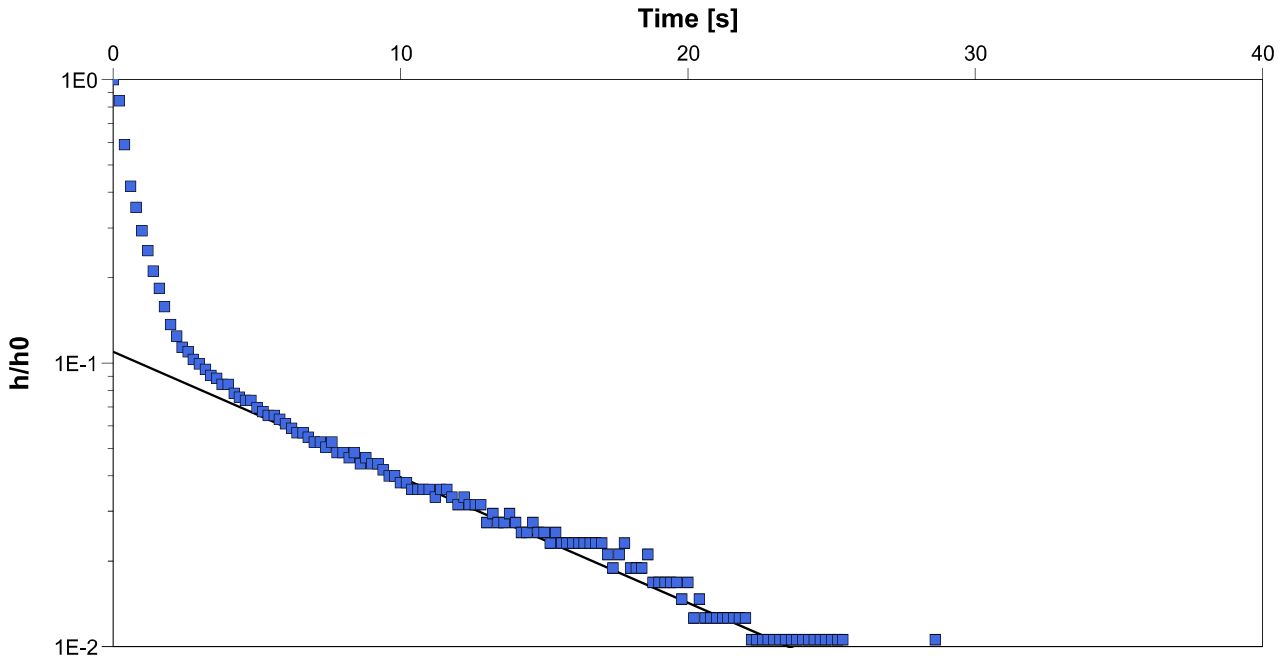


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
101	7.30×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 101-2	Test Well: 101
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	101-2	Analysis Date: 7/07/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
101	8.50×10^{-5}	

Douglas Partners
Geotechnics / Environment / Groundwater

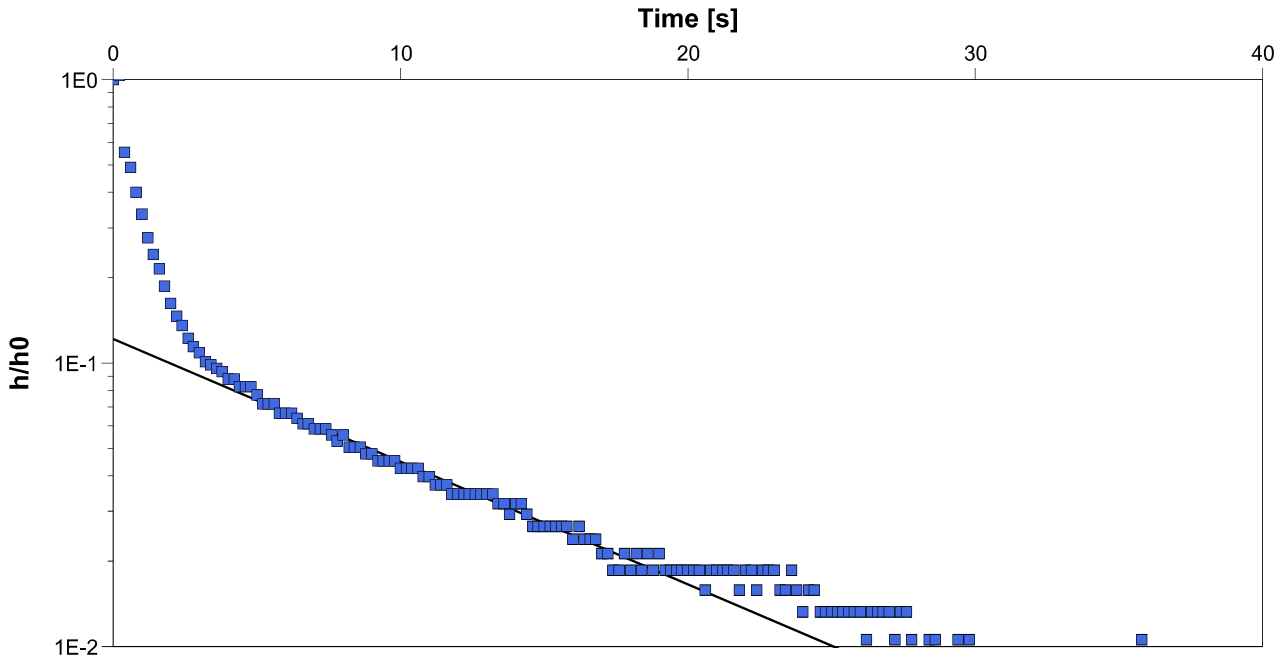
Slug Test Analysis Report

Project: Proposed Manufactured Home Estate

Number: 219536.01

Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 101-3	Test Well: 101
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	101-3	Analysis Date: 7/07/2023
Aquifer Thickness:		

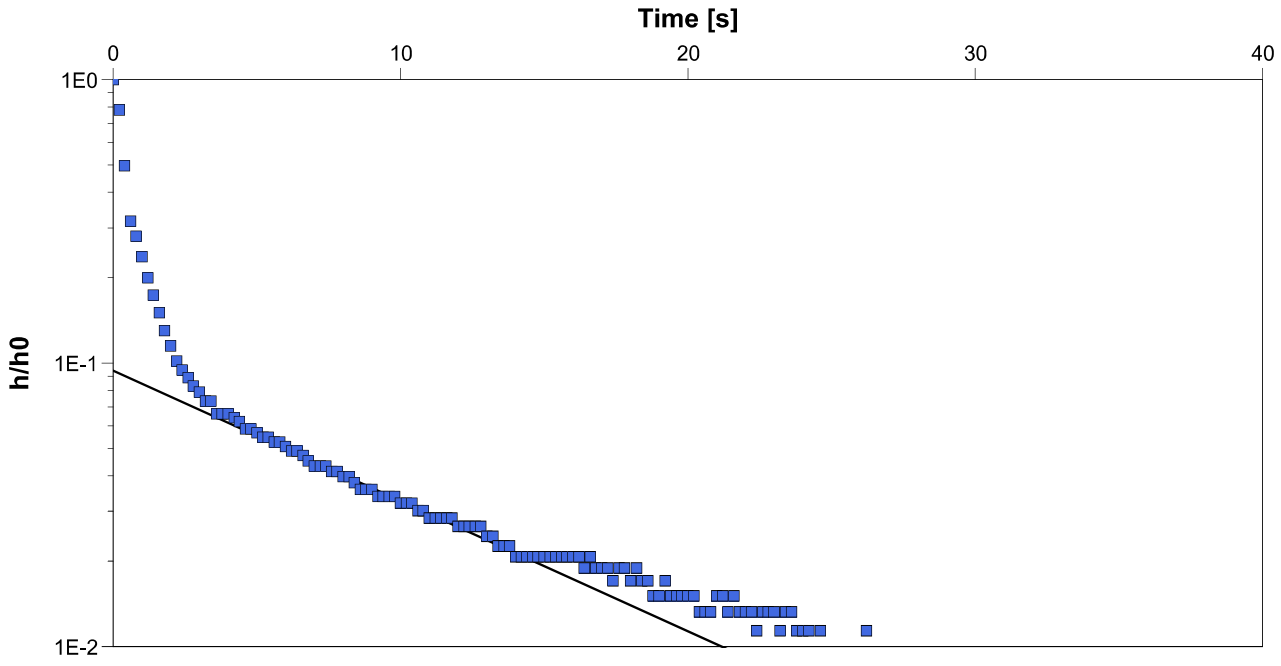


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
101	8.30×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 101-4	Test Well: 101
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	101-4	Analysis Date: 7/07/2023
Aquifer Thickness:		

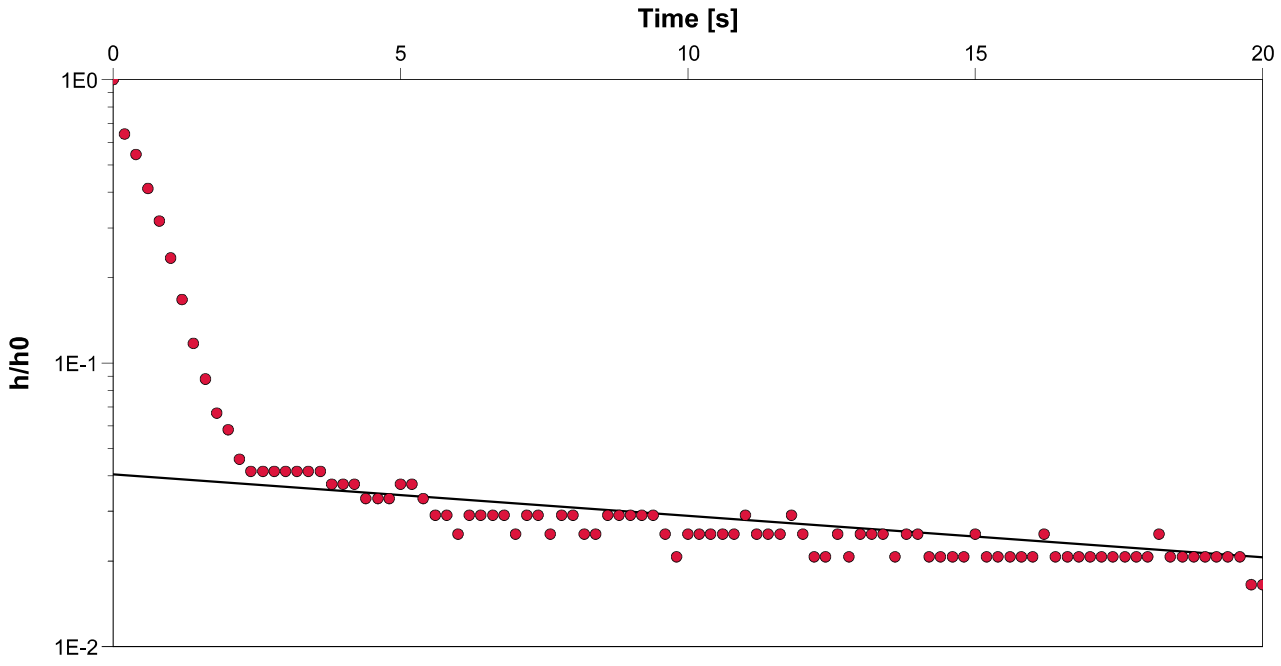


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
101	8.80×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 102-1	Test Well: 102
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	102-1	Analysis Date: 27/07/2023
Aquifer Thickness:		

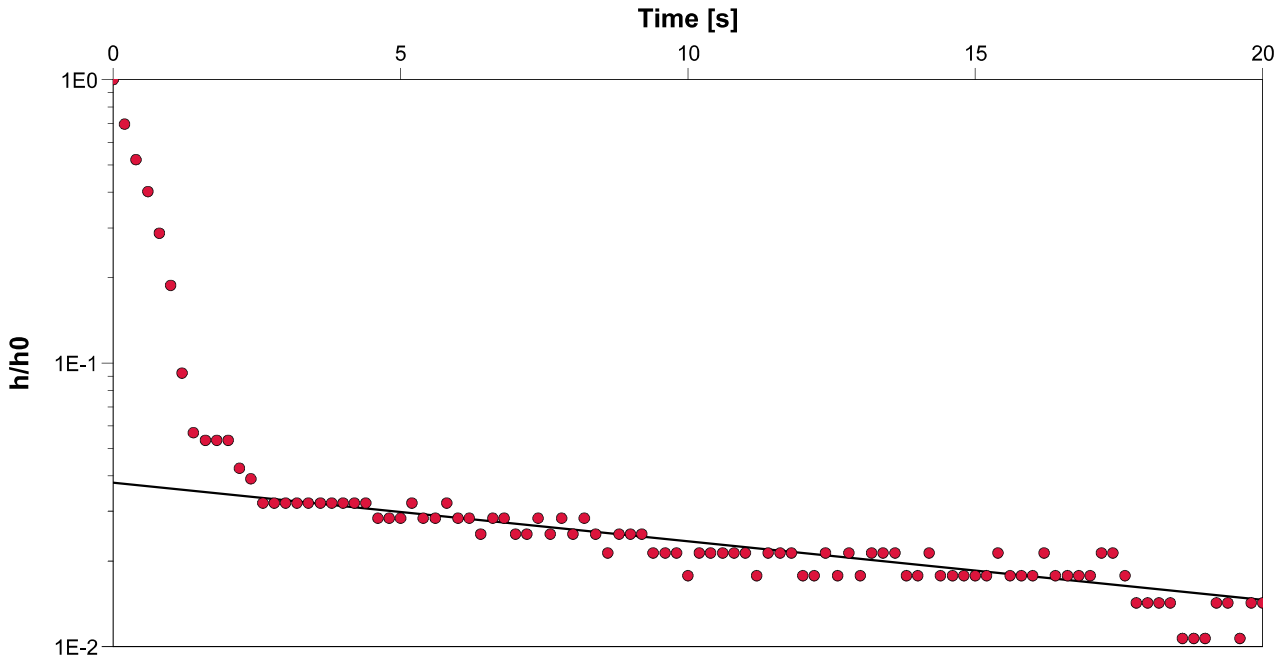


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
102	2.70×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	Slug Test Analysis Report
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 102-2	Test Well: 102
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	102-2	Analysis Date: 27/07/2023
Aquifer Thickness:		

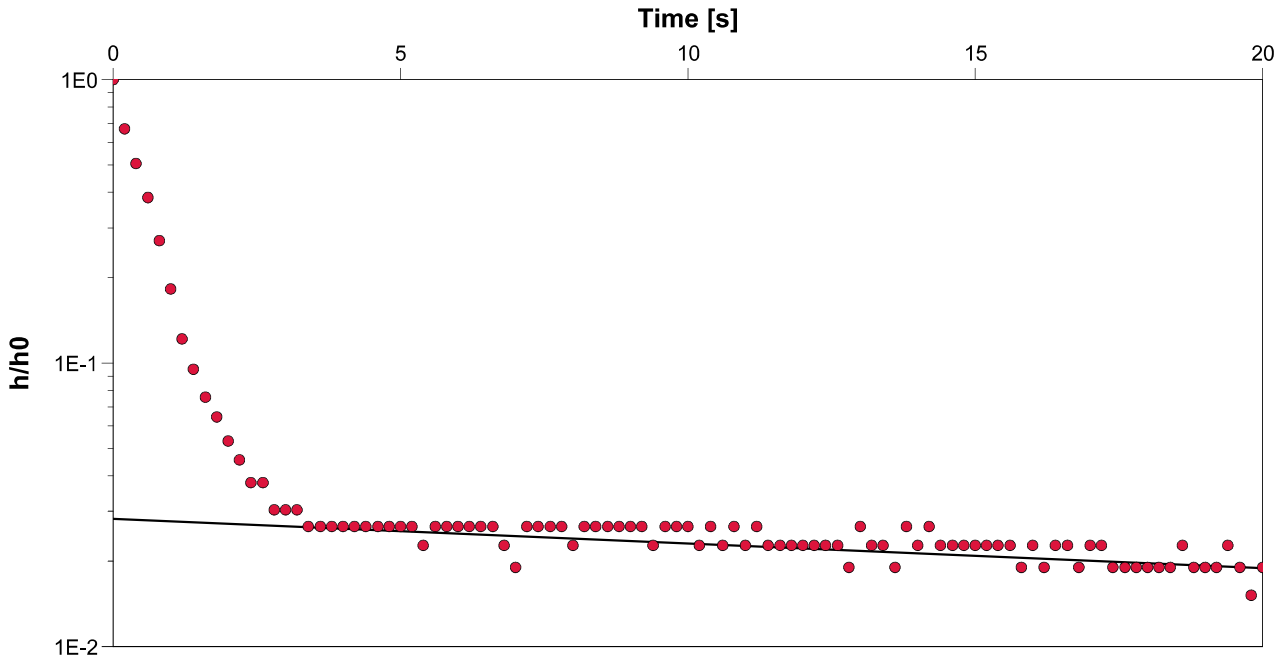


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
102	3.80×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 102-3	Test Well: 102
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	102-3	Analysis Date: 27/07/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
102	1.60×10^{-5}	

Douglas Partners
Geotechnics / Environment / Groundwater

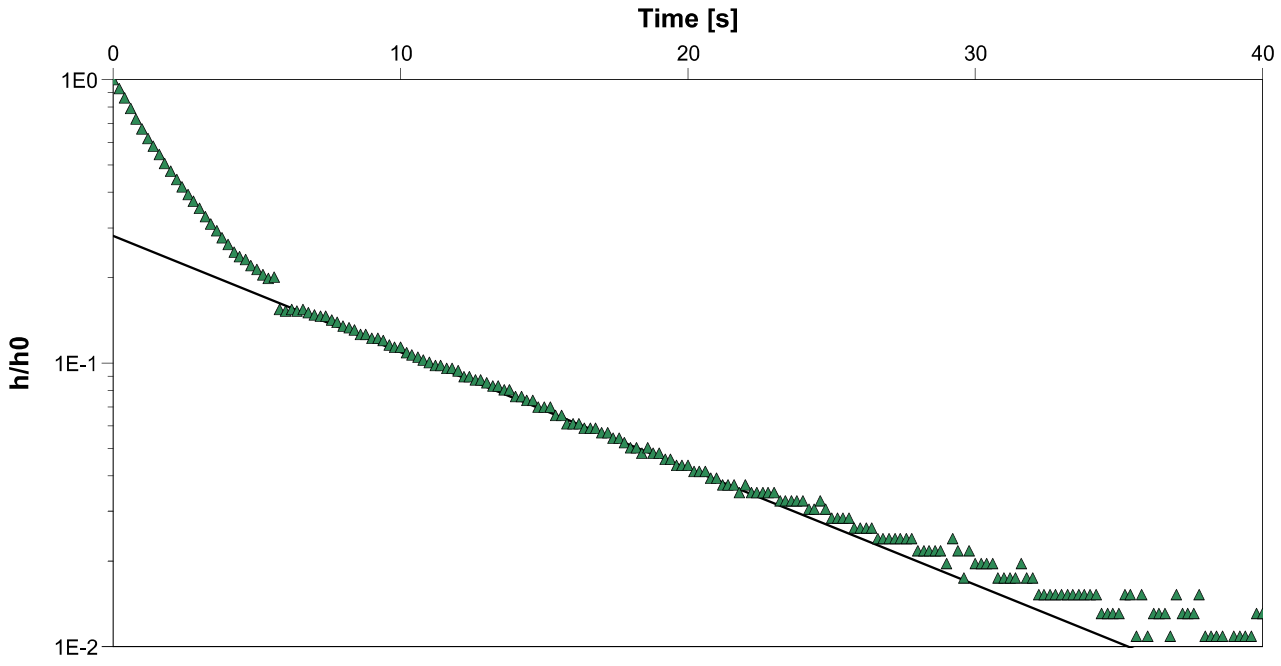
Slug Test Analysis Report

Project: Proposed Manufactured Home Estate

Number: 219536.01

Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 103-1	Test Well: 103
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	103-1	Analysis Date: 27/07/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
103	7.20×10^{-5}	

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Geotechnics / Environment / Groundwater

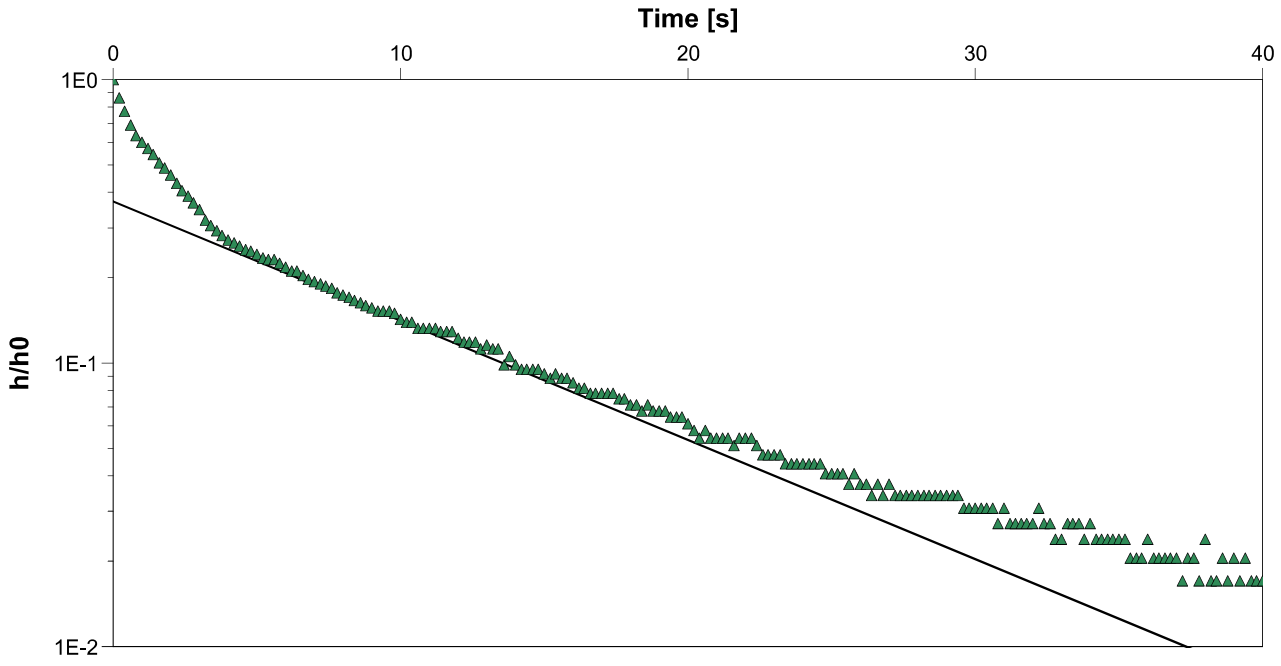
Slug Test Analysis Report

Project: Proposed Manufactured Home Estate

Number: 219536.01

Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 103-2	Test Well: 103
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	103-2	Analysis Date: 27/07/2023
Aquifer Thickness:		

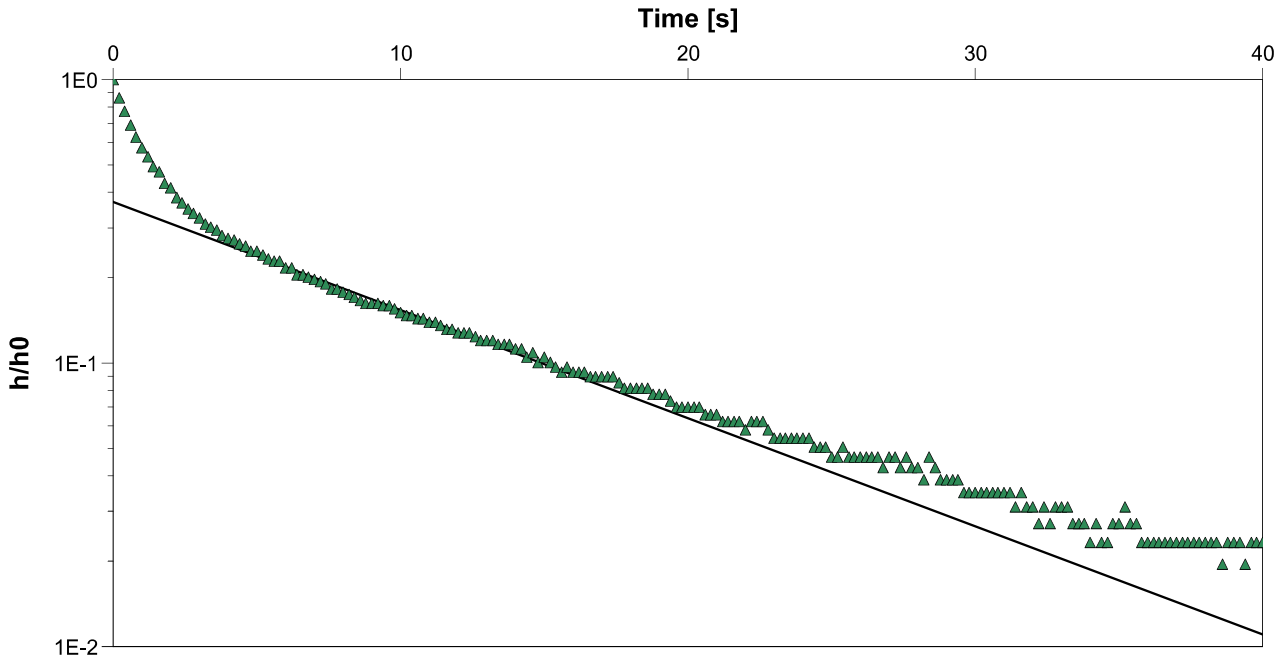


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
103	7.40×10^{-5}	

Douglas Partners Geotechnics / Environment / Groundwater	**Slug Test Analysis Report**
	Project: Proposed Manufactured Home Estate
	Number: 219536.01
	Client: Allam Property Group

Location: 82 Chapmans Road, Tuncurry	Slug Test: 103-3	Test Well: 103
Test Conducted by: LAH		Test Date: 30/06/2023
Analysis Performed by: JCL	103-3	Analysis Date: 27/07/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
103	6.70×10^{-5}	